

JOURNAL

OF

The Philadelphia College of Pharmacy.

NEW SERIES.

VOL. II.—JANUARY 1831.—NO. IV.

Original Communications.

*Address delivered to the Graduates, by Henry Troth, Esq.
one of the Vice Presidents of the Philadelphia College
of Pharmacy, at the Annual Commencement of the Col-
lege, October 1830.*

[Published by direction of the College.]

Gentlemen:

Graduates in the College:

IN conformity with the established usage of the Philadelphia College of Pharmacy, you are assembled this evening to receive from my hands, as its organ, the reward which it has allotted to you for your studies, and your pursuit of the objects which it was instituted to promote. After a regular apprenticeship, and attendance on the lectures in the school of pharmacy, you have become candidates for graduation; you have been examined by the professors and a committee of the trustees, who have reported

VOL. II.—2 H

their satisfaction with your proficiency, and the college has awarded to you its diploma, and declared you to be its graduates. The duty has devolved upon me to address you on this interesting occasion. I do not presume to suppose that I can set before your view subjects entirely new to your minds, or thoughts upon which your own reflections have not been exercised. If, however, in course of the few desultory remarks I am about to make, I can succeed in drawing your attention to matters, not new, but intimately connected with the honourable pursuit of the business of your adoption and your success in life, I shall deem myself happy in the belief, that your cultivated minds cannot entertain such subjects without being benefited by the contemplation of them. You have selected for your pursuit a business of no ordinary cast, and possessing peculiar claims to consideration and respect. It is one of difficult acquirement and tender reputation, easily tarnished by incapacity, presumptuous ignorance, indolent habits, or want of strict integrity. From its varied character it calls for diversity of accomplishments and qualifications in the candidates for its knowledge, its wealth and its honours; in which class I trust you may properly be placed. These qualifications and accomplishments, together with some of the evils and abuses mingled with our present customs, it is my intention briefly and incidentally to set before you; and however I may fail to pourtray them in their most appropriate colours, I trust my efforts will not be entirely unavailing; for poor indeed must be the mind of him who has treasured up no valuable experience, and learned no lesson of wisdom during a period of twenty years of observant attention to the avocation which he has pursued, and to the general aspect of affairs and customs around him. Let me rather impress upon your minds, that though on all occasions we should distrust our abilities and attainments, yet each year of our prospective lives should be viewed as a mine of hidden treasures, of knowledge, of experience, of wisdom. That it

is our important duty and privilege to labour in these mines for the development of their riches, and that our increase of wealth in these jewels of life should be steady, progressive, and certain, to our own adornment and usefulness in society.

We will now suppose, young gentlemen, that during your apprenticeships you have been models of industry; of active habits of mind and of body; of cheerful obedience in the discharge of your daily duties; that you have eschewed the self-important pride which so commonly haunts apprentices, and would fain persuade them that they demean themselves by doing the drudgery of their stations, and that they are degraded by the discharge of their plainest duties. Let us suppose that your pharmaceutical studies have been ardent and unwearied; that you have been attentive inquirers into the nature and qualities of each article of the *materia medica*; that you have been sedulously and conscientiously careful of the lives of all who obtained medicines from your hands, and that no important mistake has ever resulted from your inattention, your carelessness, or ignorance of the nature of medicines. In fine, let us suppose that the whole course of your apprenticeships has been characterized by strict integrity, by habits of industry, cleanliness, and love of order, and by a cheerful and polite behaviour to all; and superadding the diploma which you are now about to receive, the testimony and seal of the Philadelphia College of Pharmacy to the sufficiency of your knowledge and qualifications to conduct the business of your adoption; admitting all these preliminaries to character and success in life, your claims to consideration and respect would assuredly be of no ordinary cast. And yet, predicated upon such merits as these, should imaginations of your own attainments and pre-eminence haunt your minds, let me entreat you to banish them far from you. You have but just entered upon the threshold of knowledge and of character, and have yet much to learn. Arrived at an important and interesting era of your lives, it becomes you to pause and reflect.

“ A soul without reflection, like a pile
Without inhabitant, to ruin runs.”

You may quickly discern the great and powerful influence of custom and fashion pervading the inmost recesses of society, and moulding the habits, and manners, and thoughts, and actions of those who surround you: their virtue, morals and business habits, and the movements of trade, all bend to the influence of these mighty magicians, who model the youthful character to conformity with the existing order of things around them. Are you prepared to go with the current of fashion and custom whithersoever it may set? Your answer can easily be anticipated. And yet few are aware, to the full extent, of the magical influence of these potent delusions. They are syrens whose sweet music lulls our understandings to sleep, and who would fain beguile us into the broad and beaten track, even though destruction awaited us on the way. That we may not blindly follow in the footsteps of others, and that we may in proportion to the advantages we possess, and to our natural and acquired ability, give our full share of impetus to the march of mind, we should be careful to strengthen our understandings and mature our judgments by the opinions of the aged, the experienced, the wise and the good, both the living and the dead. And whilst we read books, and men, and things, let me earnestly recommend a vigorous and manly exercise of your own judgment in the affairs of life. It is not infallible, it may sometimes lead you astray: but admonished by the wisdom and experience of others, and held in just subordination to divine influence, it is the rock of your safety in the storms of life. Whilst no delusive views should tempt us to set up for reformers of society, yet as an integral part of society it is our solemn duty to reform ourselves, and to hold up a good example of sound opinions and correct actions to our fellows. To qualify you for such purposes of usefulness, you should endeavour to form to yourselves rigid and correct standards of merit for your government, as men, as mer-

chants, as pharmaciens; and whilst you carefully avoid a censorious disposition, you should freely and rigidly examine and consider the customs and habits of those around you, whose pursuits resemble your own. Are they in every particular such as your conscientious and deliberate judgment approves? If not, wherein do they differ? And are you well assured that in your estimate of these differences you set a relative value on them, commensurate with their merits, neither too high nor too low. On the one hand you run a risk of becoming eccentric and visionary, and endanger your character for sound and discriminating judgment. On the other, by undervaluing these differences, you are not likely to view them with a critical and discerning eye; the eyes of others will become your medium of vision, and you will travel the road of life with the common mass, who are moved forward by the current of fashion and the impulse of custom.

In forming the standards of merit for your government, from a rigid examination of the existing order of things in which you move, your attention will perhaps first be called to the history, condition, and prospects of the trading community, in which you are about to launch your occupation, and embark upon it your hopes and fears, your fortune and your happiness, your integrity and your honour. In taking a view of the condition of trade, as exhibited to us within the compass of a few past years, we behold much to lament, and much to condemn; a continued series of rapid alternations of prosperity and adversity; the cupidity and folly of our legislators deluging the country with banking institutions; the credit system inflated and morbidly extended to an immeasurable degree; the cheapness of credit tempting thousands to embark in business without sufficient knowledge or qualifications to command success, and inducing wild speculations, a general system of over-trading, and the natural consequences invariably attendant upon such a state of things, embarrassments and insol-

vencies, the fruitful source of dishonour and degradation, and loss of integrity.

The great uncertainty of trade, and the consequent danger of insolvency, are produced by numerous causes of very different character. Some few of them are misfortunes and calamities, which human prudence and foresight cannot avert; but the greater part result from relying too much upon persons who deceive us, or are themselves deceived—venturing into business, without sufficient capital in character or knowledge of our pursuit—yielding to a morbid desire of getting rapidly rich—embarking in speculations—and mainly, the universal custom of over-trading, arising from the credit system of the country, which has its origin in the excessive banking system that pervades the whole union. It is an old maxim, that the best things, when perverted, become the worst. This will not inaptly apply to the banking system, the beneficial influence of which, within narrow limits, and with wholesome and wise laws to protect the public from its running riot, is not to be questioned. It gives vigour and activity to trade: it furnishes a useful medium of exchange; and when used with great caution, it produces a healthy stimulus to enterprise. These are the effects, when the number of banks is limited. Let these limits be extended, and you put into the hands of the trading community an intoxicating bowl of tempting aspect and delusive efficacy. The desirable requisites for persons about to embark in business, are, capital in character—capital in knowledge—and least of the three, capital in money. The two first will, under any state of things, generally command the last, when they are eminent in quality and degree; but this standard of eminence sinks, and the merits of the trading community are depreciated, in proportion to the extension of the banking system, and the cheapness of credit. These may be extended and increased, until the commercial operations of a country become almost a lottery, and the business even of the skilful and the prudent

a game of hazard. In our youthful, vigorous, and productive land, where the means of subsistence are easily obtained, a moderate share of industry and steady habits, knowledge of business, and prudent calculation, ought not only to command sufficient food, clothing, and shelter, but a reasonable supply of the luxuries of life; and insolvencies should be of rare occurrence.

The standard of essential qualifications for embarking in trade should be raised: longer apprenticeships, or subordinate services after their termination, and increased stability of character, are the wholesome remedies which should be taken by thousands, who now dash onward with blind and heedless impetuosity, determined to make up in enterprise and spirit, what they lack in character and knowledge. Grasping at capital and credit wherever they can be found, and reckless of consequences, they embark in foolish enterprises, they undertake wild speculations, they spread out in broad and palmy luxuriance, to the admiration of the crowd, the wonder of their friends, the envy of their acquaintance, and to the evil example of all. Their career is generally short, and their catastrophe often marked by ruin and distress, loss of character, integrity, and self-respect. If these effects were confined to themselves, how deplorable soever they might be, small comparatively would be the evil that society would sustain: but the friends who put forth their breath to blow the bubble that dazzled them in the sunshine; the incautious and the confiding; and many whose only misfortune it was to be transiently fellow passengers by the way, feel the catastrophe, and oftentimes to their ruin. Let it not be said, that these are extreme or rare cases. In greater or less degree, such instances are almost of daily occurrence, and the example of their frequency takes from them the wholesome influence of public reprehension.

To these temptations and evil influences, the druggist

and apothecary is exposed in common with other merchants. We will now turn our attention to some of those peculiar to pharmacy. There is perhaps no business or profession pursued in which long and regular apprenticeships, industrious and studious habits, love of order and method, varied knowledge, and unbending integrity are so necessary as in our own. In most other pursuits, the only penalty of ignorance is individual abasement or unsuccessful efforts. In the business of *your* adoption, the case is widely different. The consequences of insufficient knowledge may be fatal and calamitous, involving the health and lives of those around you.

In the composition and preparation of its articles, pharmacy is a trade ; and owing to the extreme nicety and great diversity of its preparations, is a trade of difficult acquirement. In the operations of purchasing, importing, and selling, it is a mercantile pursuit ; requiring an intimate and distinctive acquaintance with an immense number of articles—a knowledge of their sensible qualities, their commercial history, and their various officinal preparations—the relative degrees of their liability to be injured by time, exposure to air, light, and the depredation of insects, and other causes acting upon them with almost infinite diversity. From all which, it is evident, that there is nothing within the compass of buying and selling, a perfect knowledge of which is equally difficult of acquisition. But the business of the pharmacien stops not here :—it is a *profession* calling for education, intense study, and extended scientific attainments in chemistry, botany, mineralogy, animal physiology, and the various branches of natural history.

A knowledge of the nature of the human system and its diseases, is of important service to the pharmacien ; for though the regular, scientific and enlightened apothecary, and the medical practitioner have distinct professions, they are intimately and importantly connected ; and whilst it

would be unbecoming in the apothecary to obtrude himself upon the community, or the patient of the physician, as a medical adviser, yet, *as such*, he has his rights and his duties to perform. In emergencies where the skilful physician or surgeon cannot be had, as well as in many unimportant cases, particularly in the lower walks of life, where the sufferers are not accustomed to incur the expense of regular medical aid, he should be capable of giving valuable advice, and rendering available assistance. Humanity and benevolence call upon him to qualify himself for rendering such kind offices, for which he gets neither fee nor pecuniary reward, unless it be the trifling consideration of the medicine used, which, in such cases, is oftentimes given away. In the discharge of these duties presumptuous ignorance and reprehensible quackery are carefully to be avoided.

It is an essential part of the apothecary's business to be well acquainted with the peculiar *medical* properties of all his medicines. Let him superadd a general knowledge of the human frame, and the nature and characteristics of its common diseases and their simple remedies: let him beware, however, in the exercise of this knowledge, that he does not intrude on the business and province of the physician, by visiting and prescribing for the sick, or obtruding his advice upon the patient of the doctor*. In England apothecaries have duties to perform very different from ours, and are virtually a lower grade of physicians and surgeons; previously qualifying themselves for their station by the requisite

* These are individual opinions of the writer, and in some instances are known to differ from those of other members of the college. He is aware that it is a subject of much nicety, and he would not be understood as recommending to apothecaries to meddle officiously with the healing art; but, as opinions have been promulgated which would seem to call in question the right of the apothecary to acquire or exercise the smallest degree of knowledge of the application of medicines even to the most trifling ailment of the human system, he deemed it his duty to express his dissent from such doctrines. An apothecary cannot have too much knowledge, nor can he be too discreet in the use or exercise of it.

studies. They are examined and become graduates, and perform a large share of the attendance on the sick. The English customs are widely different from those of this country, which may be considered as erring in the other extreme, by paying little or no attention to the study of the nature of diseases. There the apothecary is called upon in common cases to go to the houses of the sick to prescribe for them, and to administer his medicines in such quantities and kinds as he thinks proper. Prohibited from charging for his knowledge or his services, he is exposed to the temptation of overcharging his medicines, or giving them to excess, to compensate him for his attendance. Let us avoid the English system,—it has many points and tendencies of which we cannot approve, and it is not the least of its blemishes that it tends to foster an evil of great and widely spreading magnitude—*the excessive use of medicines*. People accustom themselves to take them, and physicians frequently prescribe them to excess, without adequate cause; and the apothecary and the practitioner of medicine often merit reprehension as accessories to this increasing evil.

Passing by the matter of deficient apprenticeships and want of adequate knowledge in those who pursue the drug business in our country, one of the next evils in magnitude, and partly consequent upon the first, is the practice of indiscriminately inventing and compounding *infallible* nostrums, and puffing them in the newspapers in terms of the most disgusting and fulsome commendation. The simple and the credulous, the needy and the unprincipled, are subsidized for commendations and certificates, and the suffering world is informed that the great inventor has (apparently with condescension) appointed the principal druggists and apothecaries his special agents, upon whom it may call and get relief. The inventors of these wonderful nostrums, infallible remedies, and glorious panaceas, are generally ignorant pretenders, who know little or nothing of the nature of medicines or diseases. Though among them

there are exceptions to this general censure, yet, in the main, they are unworthy of our respect or confidence. This class of people are composed of the most heterogeneous and discordant materials;—a small part are apothecaries, the residue are from all the professions, trades, and occupations in the community: physicians, bookbinders, barbers, day-labourers, sharpeners, knaves and fools, help to make up the grand total, who honour the apothecaries and druggists with their special patronage. These, for the paltry consideration of a trifling commission, too often willingly accept of agencies, suffer their names to go abroad in the newspapers and on the directions to the nostrum, mixed with wretched literature, shameless falsehoods, and contemptible gasconading.

In condemning this wide-spread evil, I do not speak in the spirit of the physician who denounces *every* species of quack medicine and all compound remedies for particular diseases, however clearly their merits may be marked, or successful they may be in application. Jealous of their profession, *some* gentlemen cannot approve of any healing compound unless it emanates from the prescription of an M.D. specially called at the time and for the purpose. This general and indiscriminate denunciation is unquestionably wrong. There are valuable medicines of this description, some of them of long standing and general notoriety; others of more recent date, which, however we may doubt some of their assumed merits, we must admit are worthy of sale and patronage. But the number of such is small in comparison to the myriads of insignificant and unworthy compounds which are obtruded with shameless effrontery upon the public, through the drug stores of our most respectable apothecaries, whose names add weight and give currency to the vile imposition. As a general rule, we should reject all agencies for the sale of such articles. If their merits are of superior cast, and their pretensions as set forth in their directions and advertisements,

sufficiently decorous and becoming, their character will perhaps assume such respectability as to make it proper for us to keep them for sale, as we do other articles of public demand : but surely our condition and business are of higher merit than to make it necessary for us to degrade it by such a shameless cooperation and copartnership with the vulgar herd of nostrum quacks.

Another of the most prominent evils among the community of druggists is the practice of dealing in and keeping for sale medicines or goods of spurious, sophisticated or inferior qualities. The various manipulations and combinations to which many of the articles sold by the druggist and apothecary are subjected, offer so many facilities for vending inferior medicines, that it is not at all surprising that such strong temptations to cupidity should sometimes prevail over the sound judgment and strict integrity of their vendors. The worst form of this vice, the sophistication and manufacture of spurious medicines, I am fain to believe is rarely practised amongst us. Within the last twenty years a decided change has taken place in this particular: an abundant supply of genuine medicines of all kinds, their extreme lowness of price, and the increased intelligence and respectability of the general community of druggists and apothecaries, has nearly banished this worst of pharmaceutical vices. Such cannot be said of the next grade of this evil.

The morbid desire of making money rapidly impels us to undersell our competitors in trade, and our efforts to monopolize a large share of business by obtaining the character of selling goods cheaper than others, are still powerful in their influence, and lead too many into the evil and reprehensible custom of purchasing and vending inert and inferior medicines.

To remedy these evils and the abuses incident to the business of the druggist and apothecary ; to diffuse the knowledge of pharmacy and its collateral branches ; to encourage long

and regular apprenticeships as essential preludes to the pursuit of this avocation ; and to elevate the character of our pharmaciens, by honourable and manly views of the duties incumbent upon them :—to attain such praiseworthy objects by a union of effort amongst the druggists and apothecaries of our city, the Philadelphia College of Pharmacy was instituted. The first of its kind on the American continent, it has encountered peculiar difficulties and discouragements. The scoffs and jeers of its open enemies ; the apathy and indifference of its friends ; the lukewarmness of its members,—some of whom, well calculated to aid and advance its interests, giving way to petty and unworthy jealousies, have shrunk from usefulness, whilst others, with good intentions, have suffered their zeal for its cause to slumber, and have too often let trifling engagements interfere with attendance on the discharge of their duties as its members. These and other causes have at times retarded its progress—yet its course, though sometimes slow, has been progressively onward. It has already accomplished much, and much remains for it yet to encounter and perform. And who is there to say that it will shrink from the discharge of the duties devolving upon it ; or that its movements will ever be retrograde ? I, for one, will never believe it. It would be a reflection so degrading to the gentlemen who are its members ; to you, its graduates ; and to the rising generation of apothecaries, who will seek its schools of instruction as the most efficient means to accomplish them in the knowledge of their profession, that it cannot be indulged for a moment. Nay, it may safely be predicted that, aided by its graduates, to whom it looks for zealous, active and enlightened support, its future progress will greatly exceed, in substantial usefulness, the most sanguine calculations of its friends and founders. It is an institution that must and will flourish and spread its beneficial influences far and wide ; diffusing knowledge, and pointing to *integrity* as the governing principle of the pharmacien. None can accuse it of sordid or selfish views ; its objects and aims are benevolent and

honourable to its members. Let us, therefore, zealously and actively unite for its support, and let us hail each annual commencement as the harvest of our labours.

Finally, gentlemen, let me strongly recommend to you the necessity of industrious habits as the essential foundations of eminence and prosperity. Would you desire to become upright and intelligent merchants, accomplished pharmaciens, respectable and thriving citizens, meriting and obtaining the honours and rewards of the profession which you have espoused: you must banish indolence of mind and of body; you must be active; you must work; you must study. An *indolent* apothecary should be held as an anomaly in creation. There is no pursuit so incompatible with indolence. To industrious and cleanly habits add a love of order and method in your store and in your business. These primary virtues of the mercantile pharmacien should not be the less valued because taken together they are comparatively of rare occurrence. When we look round at many of the drug stores in our cities and villages, the heart often sickens at the sight; dirt and filth, disorder and confusion, decay and waste, with an aggregation of ill smells, too often characterize them. These once tolerated, we accustom ourselves to preside over confusion, and look calmly on disorder within our own control; or we imbibe a distaste for our stores, which become prisons to their inmates, who consider their presence in them as a necessary evil. Though sometimes we see those who mingle their pleasures and their business to the serious detriment of their prosperity, yet the reverse of this is a common failing, and is apt to be of evil tendency. Moderate labour, exercise, and active and industrious habits, are not only the foundations of our prosperity, they are essential to our happiness, and are virtually a part of it: though it is a common delusion of the mind to indulge a belief to the contrary. Thus business becomes an irksome toil, and is pursued as a necessary evil. Instead of this let me urge you to a contrary course. Cultivate a love of your business

from its own inherent merits, as a means of present happiness and as a source of honourable dependence and virtuous enjoyment. Become not its slave, nor let it tyrannize over you; but let it be rather as your companion and friend. Watch over its character and guard its honour with sedulous care. It is a plant of slow and tender growth, and must be screened from the corrupting influences of pride and indolent habits, inattention and ill humour: avarice will blast and poison its fruits, and falsehood and dishonesty will wither and destroy it.

It remains for me in conclusion to declare, in the name of the Philadelphia College of Pharmacy, that Dillwyn Parish, Charles D. Hendry, Edward Brooks and Isaac Jones Smith are graduates in the college, and to present to each the diploma of the institution.

Observations on some indigenous species of the genus Cantharis of Latreille, as fit substitutes for the Blistering Fly of the shops. By Elias Durand.

The word cantharis is an old name, which was given to several insects of very different characters. Aristotle applied it not only to one particular insect, but to many of those that are furnished with membranous wings and elytra, or wing-cases. It appears, from the testimony of Pliny and Dioscorides, who mention that the best cantharis was that of which the elytra are marked with transversal yellow stripes, that the blistering fly of the ancients was not the common Spanish fly of our shops, but the *mylabris cichorii*, which belongs to a different genus, and is still used in China for the same purposes as the *cantharis vesicatorius* is with us.

Linnæus applied this denomination to a great genus of coleopterous insects, that did not contain the common Spanish fly, and embodied the latter in his genus *meloe*. Geoffroy substituted the name *cicindela* for that of *cantharis*, employed by Linnæus, and established under the latter denomination a new genus, of which the blistering fly of the shops was the prototype. Degeer, who followed next, made several alterations in the genus *cantharis* of Linnæus, and proposed for several of its species the generic name *telephorus*, which would have been adopted, had not this appellation been already given to a vegetable genus of the family *fungi*. Finally, Fabricius, without adopting the alterations made by his predecessors, divided also the genus *cantharis* of Linnæus, and formed, partly from it and partly from the genus *meloe* of the same author, a new genus, under the name of *lytta*, corresponding with the *cantharis* of Geoffroy. However, the latter denomination has generally prevailed.

Ultimately Latreille, a celebrated French entomologist, established his natural family *trachelides*, which he divided into six tribes, viz. *lagriariæ*, *pychroides*, *mordellanae*, *anthicides*, *horiales*, and *cantharidiæ*. The last tribe, generally formed of the genus *meloe* of Linnæus, is composed of eleven genera, viz. *cerocoma**, *hycleus*†, *mylabris*‡, *ænas*§, *meloe proprius*||, *tetraonix*¶, *cantharis*** , *zonotis*††, *nemognatus*‡‡, *gnantium*§§, and the |||subgenus *sitaris*¶¶.

* Geoffroy, Schaffer, Fabricius.

† Latreille. *Dices*, Dejean; *Mylabris*, Olivier.

‡ Fabricius; Olivier; Latreille.

§ Latreille; *Meloe*, Linnæus; *Lytta*, Fabricius.

|| Linnæus, Fabricius.

¶ Latreille; *Apalus*, Fabricius; *Lytta*, Klüg.

** Geoffroy, Olivier; *Meloe*, Linnæus; *Lytta*, Fabricius, Dejean, Say.

†† Fabricius; *Apalus*, Olivier.

‡‡ Latreille, Zononis, Fabricius.

§§ Kirkby.

||| Latreille; *Apalus*, Fabricius.

¶¶ Dr Bretonneau, by experiments performed with the different genera consti-

Before entering upon the subject of which we are about to treat, we have thought it useful to introduce the history of the different names given to the common blistering fly, in order to show the reason why we find this insect described in the different works on materia medica under the various names of *meloe*, *lytta*, and *cantharis*; our knowledge of entomology is too limited to discuss the propriety of using one name in preference to the other; we will therefore limit ourselves to the remark, that the genus *meloe* of Linnaeus, comprising insects very different in their physical characters and habits, is defective, and has been abandoned; that the name *lytta*, employed by Fabricius, had been needlessly substituted for that of *cantharis*, which latterly has been restored by Latreille, and generally adopted by European naturalists, and in the latest editions of the Pharmacopœias of Europe and America*.

The North American species of the genus *cantharis*, as yet described by entomologists, are about sixteen in number, five of which were discovered by Messrs Nuttall and Say, during the progress of the expedition of Major Long to the Rocky Mountains, and described by the latter of these naturalists in his American Entomology and in the Journal of the Philadelphia Academy of Natural Sciences. Some of these species, for size, multitude, and medicinal properties, are not inferior to the *cantharis vesicatorius*, and might easily supply our professional wants if properly attended to.

The object of this essay is to enable the reader to recognize, by the figure and description, the different species

tuting the tribe *Cantharidiæ*, has ascertained in a satisfactory manner, that the whole of them, the subgenus *sitaris* excepted, possess the vesicating properties in a greater or less degree.

* Although the London college, for reasons sufficiently weighty, were induced on a former occasion to transfer the blistering fly from the genus *cantharis* to that of *lytta*, the committee for revising the late Pharmacopœia determined, on the authority of Latreille, to restore it to its former genus. The work of Latreille, *Genera Crustaciorum et Insectorum*, holds the highest rank in entomology of any hitherto published.—*Dr Paris's Pharmacologia.*

which deserve particular attention ; to acquaint him with their habits and the period of their appearance ; with the plants on which they commonly feed ; with the manner of collecting and curing them ; and finally, to prove, by the experience already acquired from the experiments of a great number of respectable physicians, and from a careful and comparative analysis of their chemical composition, that they are really deserving a particular notice, as an object of public utility. Let the farmers employ their children in gathering these insects, and every druggist and physician encourage their labour by liberally purchasing, and employing our indigenous cantharides, and the object in view will be attained. Indeed why, if we have at hand an article that may be advantageously substituted for the foreign one, should we not enjoy the wealth the country affords, rather than submit to pay a tribute to other nations ?

Before presenting a sketch of the natural history of the genus *cantharis*, we have thought that a short description of the generic character of the *meloe* would not here be out of place, as much to show how inapplicable would this latter name be to the common Spanish fly and to the species which it is our intention to describe, as to notice another genus of insects possessing a vesicating power not inferior to that of the *cantharis*, and worthy also to be introduced into our *materia medica*.

Physical characters of the genus Meloe.

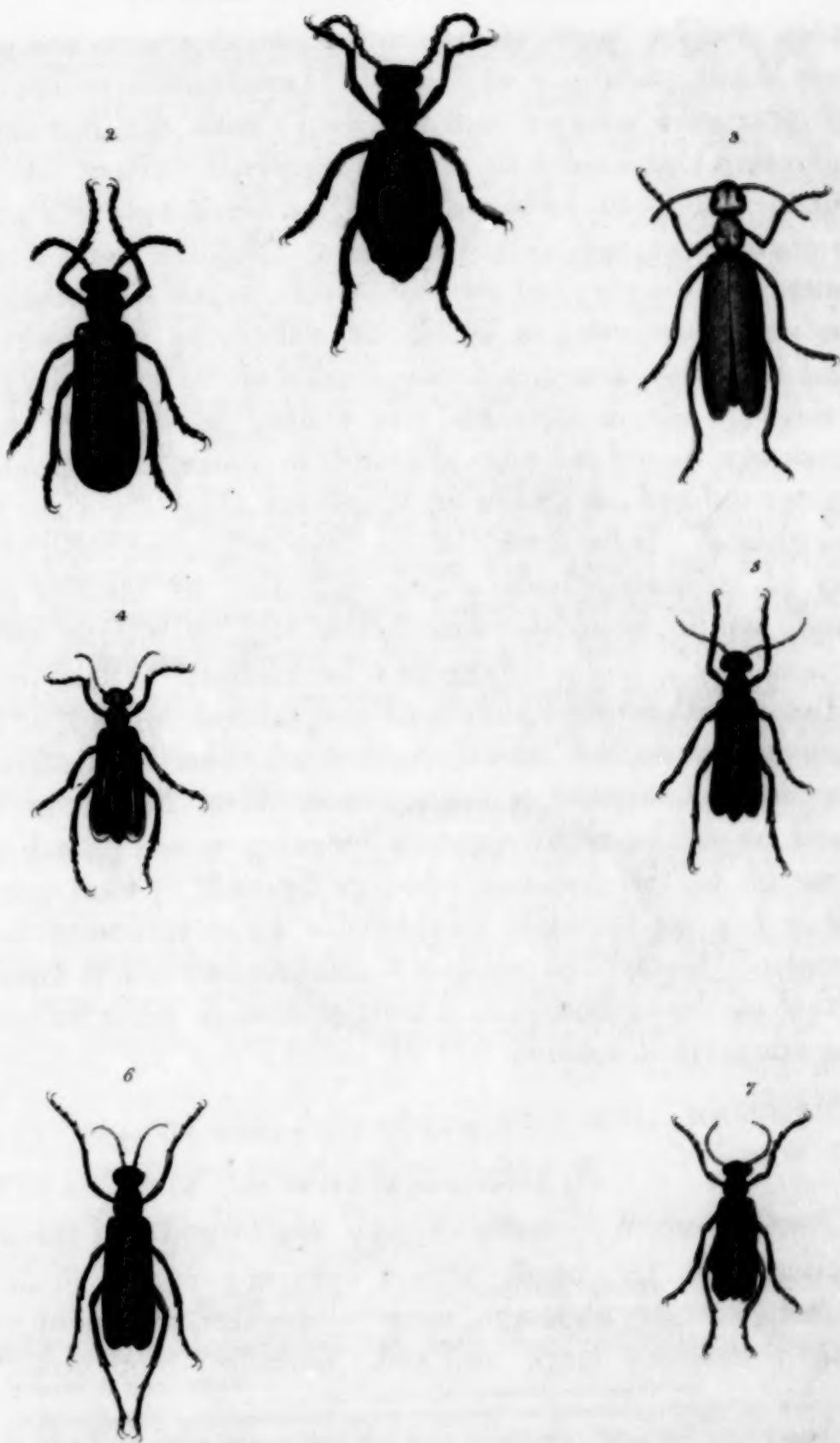
Fig. 1.—MELOE PURPUREUS.

*Tarsi** entire ; *nails* bifid ; *head* large ; *thorax*† smaller than the head, almost cubical ; *elytra* flexible, shorter than the abdomen, oval or angular, divergent ; no wings ; *abdomen* large and soft ; *maxillæ*‡ bifid, straight,

* *Tarsi*, second joints of the feet.

† *Thorax*, the dorsal portion of the trunk, included by the dorsal sutures.

‡ *Maxillæ*, or *jaws*, one on each side of the mouth, immediately beneath the mandibles or upper jaws, moving transversely, usually corneous at base and membranaceous at tip.



Drawn by T.R. Peale

Eng^d by F. Kearny



and compressed, the internal one truncated, the external larger, arcuated, and acute; *maxillari palpi** longer, composed of four joints, the first of which is very small, the second and third large and triangular, the last ovoid; *antennæ*† moniliforme, a little larger than the head and thorax, composed of eleven joints, the first large and truncated, the second small and flattened, the rest rounded, and often irregular in the male.

These insects are easily distinguished from the cantharides and the other insects of the family *trachelides* by their slow and heavy motions, the large size of their head, the absence of wings, and by having the elytra shorter than the abdomen. They feed upon the leaves and flowers of different vegetables. These insects are seldom found in large numbers. Three or four species have been described as belonging to this country. The *meloe purpureus* represented in the plate, fig. 1, is common in the neighbourhood of Philadelphia.

Physical Characters of the genus Cantharis.

Tarsi entire; *nails* bifid; *head* cordiform, not produced into a rostrum‡; *thorax* narrower than the upper part of the head, nearly square, but attenuated in the interior part; *elytra* flexible, covering the whole abdomen, linear and semi-cylindrical; *wings* perfect; *maxillæ* with two membranaceous *lacinia*, the external one acute within, subarcuate; *maxillari palpi* larger at tip; *antennæ* longer than the head and thorax, rectilinear; first joint longest, the second transverse, very short.

This genus is at once distinguished from the preceding by the form of the *antennæ* and of the head, which in the

* *Maxillari palpi*, articulated movable filaments near the middle of the dorsal edge of the *maxillæ*.

† *Antennæ*, or *feelers*, are two articulated organs of sensation situated on the head.

‡ *Rostrum*, an immovable prolongation of the head, at the end of which is the mouth.

cantharis is cordiform, whilst that of the *meloe* is nearly square, by the absolute want of wings in the latter genus, and the linear and semi-cylindrical wing-cases of the *cantharis*.

Natural history of the genus Cantharis.

These insects make their appearance at different periods of the summer, and feed on the leaves and flowers of various vegetables. The *C. vesicatorius* is more abundant in the month of May and June, and feed, generally, on shrubs and trees belonging to the natural family *jasmineæ*, such as *fraxinus*, *syringa*, *ligustrum*, &c. Our species appear rather later, and are seldom seen before July or August; they are always more numerous when the season is dry and warm. These insects are generally very shy, and when disturbed, fall immediately from the leaves and attempt to conceal themselves in the grass.

The male is smaller than the female, and dies shortly after copulation has taken place. The female, when fecundated, acquires a considerable size, twice that of the male, and the eggs are so numerous that they very nearly fill up the whole cavity of the abdomen. The eggs are small, cylindrical, and curved lengthwise. The female agglutinates them in small masses, which are deposited in the ground, where the *larvæ* afforded by them undergo all their metamorphoses. The head of the *larva* is round, somewhat flattened, furnished with two *maxillæ* and four *maxillari palpi*, which constitute the mouth, and two short and filiform *antennæ*; the body is formed of thirteen *annuli*, generally soft and yellowish, supported by three pairs of short and scaly legs. It feeds on various roots and other vegetable substances. When fully grown it changes into *pupa**, and after a certain time emerges from the earth in a perfect state.

Under favourable circumstances, that is when the weather

* *Pupa* is the second state of the insect from the egg; it is often quiescent, the members being more or less concealed by the common integument.

is hot and dry, this metamorphosis is so sudden, and the insects appear at once in such great numbers, that they have been considered as tribes of emigrating insects. It is then only that they are furnished with wings, and become capable of propagating. The white grain which has been observed in the abdomen of several species of cantharides appears, from examination of the recent insect, to be composed of the abdominal viscera, spermatic vessels and the ovaries. From the experiments of M. Farine, a French pharmacist, it appears that the blistering insects inhabiting southern exposures, have more power than those found in opposite situations; that the blistering property is more rubefacient in the male than in the female; that these insects, when immediately killed, have more activity than if preserved alive, even but a few hours, and, finally, that the time of copulation seems to be that when the insects possess the greatest degree of activity.

The indigenous species of cantharides which may be employed as substitutes for the common Spanish fly are six or more in number, viz: *Cantharis nuttallii*, *C. albidus*, *C. vitalus*, *C. cinereus*, *C. marginatus* and *C. atratus*. The two first species are the largest of all; but they inhabit a section of country too remote, and as yet too thinly peopled to lead us to expect that they will be soon introduced into our market. The others have been known for a long time, and their properties satisfactorily ascertained by respectable physicians; they even have, in cases of scarcity of the European article, been advantageously exhibited in private as well as in hospital practice, and are said to be found, even at present, in the shops of the eastern states. These four species, as well as the *C. ænea*, *C. politus* and *C. aszelianus*, which are also of pretty considerable size, belong especially to the middle states, although, occasionally, found in some of the eastern and southern sections of our country.

Cantharis nuttallii, Latr.; *lytta nuttallii*, Say (fig. 2). Body glabrous; head deep greenish, with a rufous spot on the front, antennæ robust, surpassing the base of the thorax, rectilinear,

black, opaque; *thorax* golden green; *elytra* red or golden purple, somewhat rugose beneath, green, polished; feet, black; thighs blue or purplish; *trochanters** armed with a conic spine near the base; obsolete or wanting in the female; length nine-tenths of an inch.

This insect inhabits the state of Missouri, and seems to be limited to the western region. It was first discovered by Nuttall. Mr Say mentions that this noble species surpasses in magnitude and splendour the famous Spanish fly, and possesses likewise the blistering properties.

Cantharis albidus, Latr.; *lytta albida*, Say (fig. 3). *Body* black, entirely covered with dense, prostrate greenish or yellowish white hairs; *head* with a longitudinal impressed line; *antenna* subglabrous, first and second joints rufous, the latter nearly equal in length to the first; *clypeus*†, *labrum*‡ and *palpi*§ pale rufous; *tarsi* black; *length* nearly one inch. Discovered by Mr Say near the Rocky Mountains||.

Cantharis vittatus, Latr.; *lytta vittata*, Fabr. (fig. 4). *Striped cantharis*, or *potato fly*. *Head* light red, with vertical spots; *antenna* black; *thorax* black, with three yellow lines; *elytra* black, with a central longitudinal fillet, and the whole margin yellow; *abdomen* and *legs* black, covered with a cinereous down; *length* six lines. Inhabits the middle and southern states, but is rarer in the eastern sections.

This insect feeds principally on the wild potato vine; it

* *Trochanters*, second joints of the feet.

† *Clypeus*, the superior portion of the head in coleopterous insects.

‡ *Labrum*, or *upper lip*; it is generally movable, and applied or placed immediately beneath the *nasus* and above the *mandibles*; it is sometimes entirely concealed.

§ *Palpi*, articulated movable filaments in the mouth of insects, generally shorter than the *antennæ* and divided into *labial* and *maxillary palpi*.

|| The vesicating properties of both these cantharides were ascertained by travellers. These insects were found feeding on a scanty grass, which they covered sometimes to a considerable extent. Mr T. R. Peale, who formed part of the expedition, tells me that, in one particular instance, they were so numerous and troublesome as to oblige them to sweep them off by bushels in order to clear a resting place for preparing their meal.

appears about the end of July, and inhabits, as well as the following species, the soil at the foot of the plant. They ascend in the morning and afternoon, but avoid, generally, the heat of the sun at noon. It was first described by Fabricius in 1781, under the name of *lytta vittata*, and brought into notice, in this country, by Dr Isaac Chapman of Bucks county, Pennsylvania, who accidentally discovered its vesicating powers. Dr C. published a description of it, with the results of his experiments, in 1797, in the New York Medical Recorder. It appears from his account that he employed successfully, in several cases, all the parts of these insects, as vesicatories, with the same result, and even with a more certain effect, than the common Spanish fly. They have since been used by many practitioners, and have been mentioned by some as vesicating more speedily, with less pain, and without action on the urinary organs; but Dr T. W. Harris has satisfactorily ascertained, that when externally applied, they are capable of exciting strangury, and that the same effects follow their internal exhibition. We may suppose by analogy that all the other species act also in the same way.

Cantharis cinereus, Latr.; *lytta cinerea*, Fabr. (fig. 5). *Ash-coloured cantharis.* Body black, covered with a cinereous down. All parts of the body and elytra entirely covered with an ash-coloured down, extremely short and dense, concealed beneath in the black colour of the insect. *Antenna* black, first and second joints very large in the male. It resembles the preceding species in figure and size.

The *cantharis cinereus* feeds on the leaves of the potato, of the English bean, wild indigo, and several other plants; it appears in July and August. Illiger was the first who, in 1801, recognized the vesicating properties of this insect. Dr J. Gorham addressed in 1808 to the Medical Society of Boston an interesting communication on the subject of this indigenous blistering fly, from which we learn, that for several years previous, Dr Israel Allen of Sterling, Massachusetts, had successfully employed, as a vesicatory, an insect found on

the potato vine. Dr Gorham obtained a quantity of these insects, and by successive experiments established the character which has been given to them. These experiments prove that the powder, externally applied, produces a more speedy and thorough vesication, and a more abundant purulent secretion than the pulverized Spanish fly, with the same specific action on the urinary organs; and that the internal exhibition of the powder and tincture is attended with effects similar to those resulting from the administration of the same preparations from the common blistering fly of the shops. The properties of the ash-coloured cantharis have, moreover, been frequently tested by a great number of physicians in different sections of the United States. This insect seems to be one of the most important of our indigenous flies, from the long experience that has been acquired of its efficacy, and from its greater abundance and constancy of appearance, although it is represented as being less common than formerly.

Cantharis marginatus, Latr.; *lytta marginata*, Fabr. (fig. 6). *Marginated cantharis*. Head, thorax, and abdomen, black, but nearly covered with an ash-coloured down; elytra black, with margins and suture ash-coloured; upper part of the abdomen, under the wings, marked with two longitudinal lines of a bright clay colour; length about the same as that of the *C. vittatus*, but bigger and unlike in figure.

The marginated cantharis is, generally, found on the leaves and flowers of different species of the genus *clematis*. It makes its appearance about the beginning of August. Professor Woodhouse of Philadelphia was the first who took notice of and ascertained the vesicating powers of this fly, for which he proposed the name of *meloe clematidis*, from its being found especially upon several species of this plant. However, Fabricius had previously described it, as a native of the Cape of Good Hope, by the name of *lytta marginata*. Dr Barton pretends that this insect is one of the most active American species, and that it commonly feeds upon the leaves of the *clematis crispa* and *C.*

viorna. This observation led Dr Harris of Stirling, Massachusetts, to look for it upon the *C. virginiana*, which is very common on the banks of the river Neponset; nor was he disappointed in his expectations, for about the first of August, when the vine was in flower, he procured enough of these insects to make a fair trial of their properties, which proved to be fully equal to those of any species of cantharides hitherto employed for vesicatories. A few of them were found on the *ranunculus bulbosus* and not in the vicinity of the *clematis*. They are not, therefore, confined exclusively to the species of this genus. It has been observed that they resort mostly to such branches as trail upon the ground, and that they seldom frequent the superior part of the vine.

Cantharis atratus, Latr.; *lytta atrata*, Fabr. (fig. 7). *Black cantharis*. Entirely black, immaculate, resembling in general contour the preceding, but much smaller. Length of the male four lines; of the female, five or more. It is common in the middle states, and is also found in Barbary.

This insect feeds on the leaves and flowers of several species of *solidago* and *aster*; it has been found on the *prunella vulgaris*, *ambrosia trifida*, and occasionally on the potato vine. We have met with it in considerable numbers in dry and elevated fields about Hamilton village, near Philadelphia, invariably feeding on the *aster dumosus* and other species of *aster*, although several species of *solidago* and *ambrosia* were just as common as the first plant on the spot where we found them. They were in greater number in September, and continued to appear until the middle of October.

The *cantharis atratus* has been the subject of a paper published in the New England Journal of Medicine and Surgery, by Dr G. Oswood, who exhibited it in his practice, both in substance and tincture, without failing in a single instance to produce the desired effect. Dr Harris, from whose paper we have, in a great measure, derived the information we have given respecting the four last species of cantharides, mentions that he has been satisfied with the efficacy

of the black cantharis, in many experiments he has made with it, and adds, that if any further evidence be wanted in its favour, we may find the strongest one in the fact that it is often substituted, from ignorance of the species, for the *cantharis vittatus*, without having either its virtue or identity questioned.

The three following species of native flies, which for size might also be recommended, have not as yet been tried, and we have had no opportunity of procuring them. The brassy cantharis, *cantharis æneas*, is a native of Pennsylvania, but appears to be scarce; it was discovered by Mr Say; its body is bluish green or dark brassy. The polished cantharis, *cantharis politus* and the *C. aszelianus* are both inhabitants of the southern states, and yet very little known. We have not been able to find any specimen of them in the cabinets of our city.

We shall give, in a subsequent number of this Journal, the results of our own experience respecting the vesicating properties of these different species of native cantharides, together with their chemical analysis, and directions for collecting and curing them for market.

[To be continued.]

On the Compound Syrup, and Fluid Extract, of Sarsaparilla. By William Hodgson, Jr.

[Read before the College, Nov. 24, 1830.]

Since the publication of Dr Hancock's paper in the Transactions of the Medico-Botanical Society of London, and which was copied into the Journal of the Philadelphia College of Pharmacy, (vol. i. p. 295, &c.) there can remain little doubt, that the frequent inefficiency of the Sarsaparilla arises chiefly from the careless or the erroneous manner in which it is generally prepared. Of all the forms in which

this important remedy has been exhibited, perhaps none has obtained so little justice in its preparation, and consequently in the estimation of those who have to judge from its remedial effects, as the syrup. It is now generally conceded, by those who have paid any attention to the subject, that the effective principle of sarsaparilla, like that of many other vegetables, is entirely destroyed by long exposure to a boiling heat; yet all our authorized formulæ for the preparation of the syrup are liable to this objection. As far as my knowledge extends, they all direct it to be made by decoction in water, or by long continued hot infusion; and we have invariably, in consequence, two evils to endure—the presence of a large quantity of feculent and mucilaginous matter, which causes rapid decomposition; and, what is still worse, the absence of nearly all the active principle of the root, which has indeed been effectually *stewed down*. The French Codex, for example, directs two pounds of the root to be infused for twenty-four hours in twelve pounds of warm water, then boiled a quarter of an hour, and the residuum submitted to another, and still another boiling, with ten pounds more water each time down to six. The mixed decoctions are then to be again boiled, with the senna, &c. down to one half; after straining, the sugar and honey are to be added, and the whole boiled a fifth time, in order to form the syrup! Swediaur, in his *Pharmacopœia Medici Practici Universalis*, orders to boil the sarsaparilla twice in successive portions of water down to one third (nine pints down to three) and repeated; then to infuse the senna, &c.; and afterwards to boil again with the sugar and honey. The Antwerp *Pharmacopœia Manualis* directs the root to be infused in hot water for twenty-four hours, the infusion stewed down to one-third; this operation repeated twice with the dregs; the mixed liquors then reduced to one half; the herbs infused towards the end of the evaporation; and lastly, the sugar and honey to be boiled to a syrup in the infusion. It would be tedious to particularize further the various formulæ for this preparation, which are more or less similar to those I have detailed. The American Pharmacopœia of

1820 differs in no essential point. The London college has no compound syrup, but directs the simple to be made by maceration of the root in boiling water for twenty-four hours, evaporation to one half, (which must be done by continued boiling,) and, lastly, boiling and evaporation again after the addition of the sugar, to form a syrup of proper consistence. The boiling point of such a compound being higher than that of water, subjects it to an obvious additional disadvantage. Indeed, by a strange mistake, it seems to have been generally taken for granted, that long boiling was the best, instead of the worst mode of extracting the active principle from the sarsaparilla. Can we therefore be at any loss to account for the fact, that our *sirop de cuisinier* has none of the sensible properties of the sarsa, and often requires the assistance of mercury to give it any effect whatever?

To obviate the disadvantage of so inert a preparation, I determined, some months ago, to try a different process, and I have obtained a syrup, which has in perfection the characteristic acridity of genuine fresh sarsaparilla, and discovers no tendency to fermentation through the hottest part of our summer. The following is the formula, which I can confidently recommend for general adoption.

R.—Rad. sarsaparillæ contus.	℞ij
Rad. glycyrrhizæ contus.	
Fol. rosæ rubræ,	
Fol. sennæ,	āā 3ij
Ligni guaiac. rasi,	3iij
Spir. vini tenuioris.	0x

Digest for fourteen days, at a common temperature; then strain, express, and filter. Evaporate the tincture by a water bath to four and a half pints (so as to get rid of the alcohol,) then add, white sugar ℞viiij, and form a syrup, removing it from the fire as soon as the sugar is dissolved.

When cold, add

Ol. anisi,	gtt. vj
Ol. gaultheriæ,	gtt. iij
Ol. sassafras,	gtt. vj

previously rubbed down gradually with a little of the syrup. From these quantities I obtained seven pints of syrup, possessing, as I have said, the double advantage of the perfect extraction and preservation of the active principle, and the absence of any fermentable matter.

A somewhat analogous preparation of the sarsaparilla has lately been introduced into practice, under the name of the Compound Fluid Extract, which, if properly prepared, would contain the sarsa in a concentrated state, but which has hitherto suffered the same fate as its milder relative, the syrup. It has generally been prepared by evaporating the compound decoction and adding a little sugar; and consequently shares the disadvantages of that preparation in a still greater degree*. Applying to this preparation the principles on which I made the syrup, I have obtained a compound fluid extract of a very superior quality, and possessing in an eminent degree the active properties of the sarsaparilla. The following is the process :

R.—Rad. sarsaparillæ contus.	℥xvj
Rad. glycyrrhizæ contus.	
Ligni guaiac. rasi,	
Cort. rad. sassafras,	āā ℥ij
Cort. rad. mezerei,	3vj
Spir. vini tenuioris,	0viiij

Digest for fourteen days at a common temperature; then strain, express, and filter. Evaporate the tincture in a wa-

* If the decoction is so materially injured by the long boiling to which it is subjected, what must the common extract of the pharmacopœias be but totally inert? Yet a medicine, bearing the title of Compound Fluid Extract of Sarsaparilla, is extensively made in this city, chiefly from the common German extract, strongly flavoured with liquorice and sassafras, which disguise its total want of the flavour of sarsaparilla. It is put up in six ounce bottles, containing half an ounce of the extract, and enveloped in a wrapper, flowing with high encomiums on its "invariably salutary and beneficial effects," and containing the proprietors signature as a "caution" against "ignorant imitations" of so truly invaluable a remedy!

ter bath to twelve fluid ounces; then add of white sugar 3viij, and remove from the fire as soon as the sugar is dissolved. Where the quantity made is considerable, it may be worth while to preserve the alcohol for future operations, by distilling instead of evaporating it. During the process a small quantity of resin separates by adhesion to the sides of the vessel, and which appears to be merely from the wood of the guaiacum. We have here a preparation, a fluid drachm of which contains in perfection the active principle of a drachm of sarsaparilla, and of which two fluid ounces are equal in strength, and similar in composition, to what one pint of the compound decoction of the Pharmacopœias would be, were it possible to prepare it without more or less destroying the active principle of the sarsa.

On Baume's Hydrometer.—By Daniel B. Smith.

The extensive use of the Pese-liqueurs of Baumé has imparted to it a degree of consideration to which it is not entitled either by the value of the scale or the accuracy with which it is generally made. Having had my attention turned towards the subject, every new fact respecting it which has come under my observation has strengthened the conviction that it is altogether unworthy of confidence. The original paper of Baumé does not state the specific gravity of the solution of salt which he employed, but says that a *prodigiously* rectified alcohol at 10° R. gave 40° of his scale. He then gives the volume occupied by various mixtures of rectified spirits and water, and the degrees they marked on his scale, from which the specific gravities corresponding therewith *as determined by him* may be found, viz.

Sp. V. Rect.	Water.	Sp. gr.	Deg. of scale at 5° R.
30 oz.	2 oz.	.8533	35
24 "	8 "	.8889	27
20 "	12 "	.9143	23
14 "	18 "	.9411	18
6 "	26 "	.9697	14
4 "	28 "	.9843	13
2 "	30 "	.9923	12

The experiments of Baumé are deficient in not marking the temperature at which the volume was measured after the mixture of the alcohol and water. So that we cannot be sure that we take the proper column of temperature in estimating the value of the sp. gr. The column which approximates the nearest is 5° R., which I have chosen.

In the first volume of Nicholson's Journal, an attempt is made by the editor to estimate the value of Baumé's scale. The spirit employed by Baumé is said by him to mark 37° at 0° R. and to be of a sp. gr. of .842. By consulting Gilpin's tables, Nicholson finds that alcohol of that strength marks .832 sp. gr. at 10° R. He then calculates the value of Baumé's scale at 10° R. by assuming 37° = .832; whereas if he had consulted the original table he would have found that the proper value of this spirit at 10° R. is 39° and not 37°. Nicholson then attempts to ascertain the value of 12° of the scale, and finds it, by his mode of calculation, to be .9905, and immediately afterwards, in the table he draws up, assigns .990 as equivalent to 11°. The erroneous value thus assigned to the scale of Baumé has been copied into nearly all the English treatises on Chemistry from that time to the present, and even in the Journal de Pharmacie for August 1830 I find it assumed as the basis of a calculation of the value of Cartier's scale.

The determination of this problem depends upon the sp. gr. of the saline solution, in which the hydrometer sinks to zero. The table of Nicholson makes this to be 1.0815,

which is evidently incorrect. The tables published by Bussy and Boutron Charlard in their treatise on the falsification of drugs, would make it 1.07, which is too low. The very accurate compilers of the Pharmacopœia Batava estimate it at 1.075, which is probably correct, and agrees very nearly with my own observation. It also agrees with the original estimate of Baumé, for he states that prodigiously rectified alcohol, by which he means the strongest that can be obtained by simple distillation, is 40° at 10° R. By the table in the Pharmacopœia Batava this is equivalent to a sp. gr. of .828, which is the strongest alcohol that has been made in the manner referred to. Taking this as the standard, the following is the true value of Baumé's scale.

10	1.000	21	.929	31	.873	41	.823
11	.993	22	.923	32	.868	42	.819
12	.987	23	.917	33	.863	43	.814
13	.980	24	.911	34	.858	44	.810
14	.974	25	.906	35	.852	45	.805
15	.967	26	.900	36	.847	46	.800
16	.961	27	.895	37	.842	47	.796
17	.954	28	.889	38	.837	48	.792
18	.948	29	.884	39	.832	49	.787
19	.941	30	.878	40	.828	50	.782
20	.935						

Upon comparing this with the *observed values* of his scale given by Baumé, we find that, although the higher numbers agree, the lower numbers vary irregularly, a circumstance owing no doubt to the looseness of his estimates, for he appears not to have recollected that the value of each degree could be rigorously determined.

It is surprising how carelessly authors have written on this subject. Bussy and Boutron Charlard state that Cartier's scale is formed by dividing 15 of Baumé's degrees into 16 parts, and measuring these off each way from the point which marks 22 of Baumé, which is the only degree common

to both scales. If this be correct, 10° of the former, which represents 1 in sp. gr., equals 9.2° of the latter. Yet in reducing the degrees of Gay Lussac's Alcoholmeter to Cartier's, they assume 10° of the latter to represent distilled water. In the paper in the *Journal de Pharmacie* which I have mentioned, the same value is given to 10° of Cartier, and 40° is said to mark .814, while in Bussy's table it marks only .827, and yet they both agree in their reduction of this scale to that of Gay Lussac's instrument.

The compilers of the *Pharmacopœia Batava* graduate their hydrometers for liquids heavier than water by the same scale of 10° , which is the basis of the aerometer. In Gray's *Operative Chemist*, and in the paper published in the August number of the *Journal de Pharmacie*, this scale is given as Baumé's hydrometer for salts. And yet in the scale of Baumé, the length of the first fifteen degrees was ascertained by a saline solution, containing fifteen parts of salt to ninety-five of water, and not one to nine for the first ten degrees, as in *his* aerometer and that of the Dutch chemists. The scales, it is true, very nearly agree, although founded on different bases.

These views of the subject must, it is believed, convince every chemist of the necessity of discarding these empirical instruments, and adopting an universal scale, founded on just principles, and not susceptible of variation.

Selected Articles.

A Botanical Notice of the different Genera and Species whose barks have been confounded under the name of Cinchona. By Prof. Decandolle. Translated for the Journal of the Philadelphia College of Pharmacy, from the Bibliothèque Universelle, (vol. 41. p. 144,) by John H. Griscom.

[Continued from page 241.]

III. *Remijia*.

Independently of the *buena hexandra*, Brazil possesses yet three other shrubs, whose barks are endowed with febrifuge properties. These shrubs, which were formerly known to Velozo, have been placed by him in the genus *Macronemum*, with which they have only slight affinities. M. Aug. de St Hilaire, who has carefully described and drawn them, places them in the genus *cinchona*; but it appears evident to me that they should form a particular genus, which I name *Remijia*, inasmuch as it was a surgeon of Brazil named Remijo who brought them into use; and as they are properly known in Brazil under the appellation of *Quinquinas of Remijo*. We are acquainted with three species. The *remijias* are essentially characterised by each cell opening on the back, instead of opening, as in the two preceding genera, by the untwisting of the partition. The border of the calyx is continuous, as in the true *cinchona*; the lobes of the corolla linear, as in the *exostem-*

ma ; the ovary is crowned by a very prominent fleshy disc ; and the seeds are winged and downy. The appearance of these shrubs bears some resemblance to the true quinquinas. Their leaves are furrowed above and on the edges, and curled below. The branches and the nerves of the leaves are furnished with a reddish hair, the flowers are in groups, opposite, and disposed in elongated and interrupted bunches. The bark of the *remijas* is employed in Brazil, but does not form a part of those received in Europe by the name of quinquina.

IV. *Exostemma*.

Formerly many species were confounded among the true cinchonas, which were easily distinguished by their stamina proceeding from the corolla. Mr Persoon commenced giving some weight to this difference, by forming a section under the name of *exostemma*. In a memoir which I presented to the Academy of Sciences at Paris in 1806, I admitted this section as a distinct genus. A short time after Mr L. C. Richard, adopting the same opinion, published in the "Equinoctial Plants" of MM. Humboldt and Bonpland, (vol. i. p. 131), a detailed character of this genus, which he had had an opportunity of observing in the Antilles. Since that time it has been allowed by all naturalists. This genus *exostemma* is distinguished from the cinchonas by the lobes of the corolla being long and linear ; its stamina proceeding out of the tube ; its style jutting out and terminated by a stigma entirely bulbous, or slightly bilobed ; by its capsule, which opens downwards by the unfolding of the partition ; and lastly, by the seeds, which fold themselves downwards and not upwards. From so many organic differences, it is fair to infer considerable difference in properties. The barks of the *exostemmas* participate in the bitter and tonic properties of the true quinquinas ; but they do not contain quinine ; from which we may presume that they are not antiperiodical, and moreover

that they possess decidedly emetic properties, and occasion much more frequent inclination to vomit than the true *quinquinas*. Notwithstanding these differences the barks of the *exostemmas* are known in the French Antilles under the name of *quinquina Piton*, because these shrubs grow upon the hills called Piton in these islands. They are also sometimes called *quinquina de Sainte Lucie*, from the name of the island whence the English physicians first obtained it.

The *exostemmas* present three well distinguished divisions.

The first, which I name *pitonia*, in order to recal the common name, is composed of nine species, all indigenous to the Antilles; it is here that we find the *exostemma floribundum*, which is the true *quinquina Piton* described by Badier in the "Journal de Physique," in 1789, and the *quinquina de Sainte Lucie* described by Davidson in the seventy-fourth volume of the "Philosophical Transactions."

The *exostemma caribæum* and some other species appear to possess the same properties. This division is characterized by the indentures of the calyx being divided even to the base of the border; by the tubes of the corolla being longer than the lobes; by the corolla being always smooth; and the stigma always entire.

The second division, named *brachyantherm*, is distinguished from the preceding by the tube of the corolla being shorter than the lobes, by the corolla being sometimes smooth and sometimes hairy, and the style sometimes entire and sometimes bilobed. It comprehends five species, of which four are indigenous to Peru, and one to the Philippines, which by reason of its seeds being but slightly winged, may be considered as a distinct genus. The properties of all these *exostemmas* with short corollas are unknown, and it is probable that they are of but little importance.

The third division, which I call *pseudo stemma*, is composed of two species discovered in Brazil by M. de St Hilaire. It is characterized by the border of the calyx being

bell-shaped, or an entire tube, or slightly indented at the top. The corolla is always hairy without; its tube is shorter than the divisions; the stigma has always two lobes; the fruit is yet unknown. This division will probably one day be considered as a particular genus; one of these species bears in Brazil the name of *quina do mato*, which seems to imply that its external relation with the quinquina is known, but that its properties are very inferior.

V. *Pinckneya*.

Michaux the elder discovered this genus in Georgia near Saint Mary, and it has since been found in South Carolina; it is very easily distinguished from the true quinquinas, and from all the preceding species, by one of the five lobes being expanded into a foliaceous, membranaceous, coloured border, of very large dimensions compared with the four others. Notwithstanding this singular characteristic, M. Porret has not hesitated to unite it with the cinchonas under the name of *Cinchona Caroliniana*. We might identify it with the *Musscenda* from which the *pinckneya* differs only by having the anthers slightly projecting.

The bark of the *pinckneya* is a popular febrifuge in its native country, but we are in possession of few authentic details of its efficacy and mode of action. It would be interesting to obtain them from the American physicians, for the *pinckneya* grows in the open ground in the gardens of the south of Europe, and if its medicinal qualities should deserve it, its naturalization would not be very difficult.

VI. *Hymenodyction*.

The five preceding genera comprehend all the American barks which have been, with more or less propriety, confounded under the name of quinquina. But the old world has likewise some trees or shrubs analogous to the cinchonas, by their forms or their properties, and which have been confounded with them.

The genus which Wallich named *Hymenodyction* comprises four species, one of which Roxburgh had described under the name of cinchona, and the three others discovered by Mr Wallich himself; all these plants are originally from the East Indies; their bark is bitter and astringent. The *H. excelsum*, which is well drawn by Roxburgh in pl. 106 of his Flora of Coromandel, is a large tree called in that country *bundaroo*, the wood of which competes with that of the mahogany; the history of the others is less known; the hymenodyctions are allied to the cinchonas by having the capsule opening in an inverted manner, that is to say, upon the back of the cells, and downwards, instead of opening upwards by the untwisting of the partition; their style projects considerably out of the tube, their anthers are small, their seeds are surrounded by a sloping wing at the base, and beautifully reticulated, whence is derived the generic name.

VII. *Luculia*.

After withdrawing the four preceding species, there still remained a tree of the East Indies which was regarded as a true quinquina. Mr Sweet has lately proved the contrary, and as this tree is known in India by the name of *Luculi Swa*, he has given this genus the name of *Luculia*. This tree is peculiar in sometimes having its style very projecting, in which case the stamina are concealed within the tube; sometimes the style is concealed in the tube, when the stamina are projecting. The calyx has five linear lobes almost filiform and caducous; the seeds are imbricated, not edged, but terminated by a very short wing. The properties of the bark are yet but little understood.

VIII. *Danais*.

Some distinguished botanists, such as MM. du Petit-Thouars and Bory de Saint-Vincent have been desirous of uniting to the genus cinchona some climbing shrubs, originally of the isles of Bourbon and France, and which the il-

lustrious Commerson had designated by the poetical name of danaïs, from their flowers offering the same phenomena as the luculia, and the suppression of one of the sexes by the other affording a comparison to the manner in which the daughters of Danaïs smothered their husbands. Besides this peculiarity, and the great difference of their manner of growth, the Danaïs differ from the cinchonæ by the spontaneous opening of the capsule, and the shortness of the calyx. As to the properties of their barks, they are, it is said, bitter and astringent, but this is not well determined.

1. It results from the enumeration which I have just made, that the forty-six kinds of trees or shrubs hitherto more or less confounded in the books under the name of cinchona, compose eight distinct genera.

2. That what we understand of the properties of the barks of these eight groups, appears to announce a distinct relation between the external forms and the medicinal virtues; and that in particular, although all these barks may be useful in intermittent fevers, as bitters, or astringents, it appears that the cinchonas alone contain the quinine, and that probably they alone are endowed with the anti-periodical property.

3. That in particular the *yellow quinquina* of the European Pharmacopœias is produced by the *cinchona pubescens*, and probably also in part by the *C. purpurea*, and the *C. humboldtiana*. The *orange coloured quinquina* by the *cinchona lancifolia*. The *red quinquina* by the *C. scrobiculata* and the *C. magnifolia*. *Grey quinquina* of the first quality by the *C. condaminea*, and those of an inferior quality by a mixture of the different kinds.

4. That the eight genera obtained by the distribution of the old genus cinchona, are sensibly in accordance with the geographical distribution of these vegetables over the globe—the luculia and the hymenodyction in the East Indies; the danaïs in the isles of Australasian Africa, (Bourbon and France), the pinckneya in Carolina and Georgia; the remijia

in Brazil; the buena and cinchona in Peru and the Andes of Bogota; the genus exostemma is an exception to this regularity, but we may still observe that the true exostemma grows in the Antilles, the pseudo-stemma in Brazil, and the brachyauthes are divided between America and the Philippines, with this circumstance, that that of the Philippines, will perhaps form a distinct genus.

The considerations deducible from the studies of properties and of geographical distribution tend in this case, as in a multitude of others, to connect themselves with classification, and these various orders of knowledge lend to each other a mutual support.

Extract from a work presented to the Statistical Society of France, by MM. Payen, Secretary General of the Society, and Defresne.

(We presume the following statements respecting the condition and prospects of pharmacy in the department of the Seine, will be interesting to most of our readers. It is not probable there are any very material errors in the account, and we must confess our admiration for the zeal and attainments of our brethren of Paris is increased by the facts disclosed in the extract. While they are impelled by the spirit and knowledge of the age to scientific pre-eminence, their profession is trammelled with difficulties which essentially encroach on their pecuniary profits.)

The following table has been constructed from positive data and information, carefully collected from a number of the principal pharmaciens of Paris.

STATISTICAL TABLE

Of the Pharmaciens of the Department of the Seine.

Number of stores in Paris, 264; out of Paris, 21; total, 285.

Capital.	{	Amount of the stock of the	Fr. 8,550,000	}	12,540,000
		285 establishments,	-		
		Amount of rents,	3,990,000		
Interest on 12,540,000 francs at 5 per cent.					627,000
Hands employed.	{	11 Assistants, at 45 francs per month,	5,940	}	144,204
		40 do. at from 30 to 35 do.	15,600		
		80 do. 25 do.	24,000		
		140 do. 20 do.	36,600		
		12 do. 18 do.	2,592		
		23 do. 15 do.	4,140		
		15 Apprentices paying their board and instruction,	"		
		72 Apprentices receiving their board,	"		
		57 Laboratory boys and labouring men, at from two to three francs per day,	51,972		
		15 Female clerks, <i>dames de comptoir</i> *, at from 400 to 500 francs per year,	6,450		
General expenses.	{	Patent, personal tax, fuel, lighting, and board,			761,000
Crude materials.	{	Exotic and indigenous, impure products of manufactories requiring purification,			1,320,000
Total expenses,					2,852,294
General receipts.	{	Products of the laboratory, medicaments, prescriptions, &c.	3,264,800	}	3,275,800
		Retribution from pupils, or board of apprentices,	11,000		
Nett profit,					423,500

Observations.—It results from this table that the nett profits of the apothecary on the capital in trade are something less than legal interest. The prosperity of the ancient shops was far from being so precarious; yet now, the competition in the sale of medicines, as well as in scientific researches, compels the apothecary to exercise his profession with greater care, to render his studies more complete, and increases the difficulties of his labours in the laboratory.

* This employment is quite unknown to us. We are told that a female clerk or *dame de comptoir* is attached to some of the principal pharmaceutical establishments in France, whose department is to receive the monies, keep the books, make out accounts, write the directions, &c.

The disproportion between the number of shops and the population may be regarded among the first of the several causes which have occasioned the decline of the pharmacies, as respects their pecuniary profits. Taking Paris as an example:—it has been established by the most accurate calculations, that it requires a population of 4000 souls to support an apothecary. Now, estimating the population of Paris at 700,000, it appears that it could be supplied with medicines by one hundred and seventy-five apothecaries, while it in fact contains two hundred and sixty-four, being a surplus of eighty-nine. From this population of 700,000 may be deducted one-seventh, who inhabit the hospitals, when diseased; allured, especially for three years past, by the Montyon legacy, and who, inscribed on the list of the indigent, derive their medicines gratuitously in the houses of relief, to the providing of medicines for which the apothecaries are now strangers, this advantage being withdrawn from those who were in possession of it in 1816.

As a second cause may be noticed the law of twenty-one Germinal, year eleven, (11th of April, 1802), which established medical juries, and ordained that the professors should be paid from the proceeds of admission, which, by thus placing the man between his interest and his duty, contributed to the multiplication of shops.

A third cause has been the inexecution of this same law, every way imperfect as it was, which has not been respected for twenty years, through the carelessness of the civil authorities, and of the school of pharmacy; perhaps, because of its insufficiency, which has given cause to regret the former juries, and to solicit the creation of chambers of discipline.

A fourth cause is the *prête-noms*, or name-lending; a new branch of industry, or rather of scandalous fraud, which permits every individual, a druggist, a grocer, an herborist, and even a fruiterer, to exercise the art of pharmacy, and to a pharmacien retired from business to traffic thus with his diploma at so much per annum.

Fifth cause; granting liberty to grocers to sell one hundred and sixty-four simple drugs.

Sixth cause; besides the grocers, druggists, herborists, and fruiterers, who all invade, as has been stated, the domain of pharmacy, it is our duty to invite the benevolent attention of the superior authorities to the sale of medicines, especially in the provinces, in the hospitals, bureaux of charity, and religious houses, by females or sisters, who are not subject either to rent, patent, fuel, or salaries of pupils; in fine, to none of those overwhelming expenses which crush the apothecaries.

It results from this state of things that the pharmaciens, alone limited to the exercise of their art, see this same art exposed defenceless to the invasion of many other professions, contrary to the principles of distributive justice.

Finally, we may enumerate also the simplification of medicine, arising out of the new medical doctrines, which indeed we cannot regret, if it may be regarded as the perfection of medicine; yet it is proper to notice in this place the influence it exercises on the condition of pharmacy.

The invasion of pharmacy by the neighbouring professions is productive of the greatest inconvenience; the public loses its guarantee, its health is compromised, the law is forgotten, and the apothecary ruined. In order to better his condition it only remains for him to abandon a profession which is no longer protected by the authority of the law. However, it must be obvious to every one how important it is to society that the apothecary should have a proper latitude for the free exercise of his profession. The sale of poisons ought to belong exclusively to the apothecaries, (that is, the sale by *medicinal weight*), and it should be commenced by drawing up a new list of substances reputed poisonous, in place of that published the ninth Nivose, year 12, (9th January 1803), by M. Dubois, who was then prefect of the police.

The restraints upon the sale of poisonous substances should not exist, as it furnishes such a very slender revenue

that pharmacy would not be the richer for it. Indeed most of the pharmaciens, preferring their tranquillity to a sale so slightly productive and so dangerous, have for a long time ceased to keep any poison, and thus the danger to society is very much increased.

Besides the 3,275,800 francs which represent in a mass the receipts annually made by the pharmaciens, the sale and exportation of secret remedies has produced from time to time very considerable revenues and profits. We have seen large fortunes rapidly accumulated on this single foundation, at the expense of an innumerable crowd of credulous people, who have not always proved the benefit of these *universal specifics*. It would be difficult to appreciate the importance of these sales, and very probably their gradual tendency will be to decline. If they amounted annually for some years to the sum of many hundred thousand francs, they scarcely, if at all exceed, at this moment, thirty or forty thousand francs, in the hands of eight or ten pharmaciens.

This partial traffic continues to be one of the evils which still oppresses pharmaciens. But the last judgment of the tribunals, and the interdiction of bills posted up, recently obtained, would remedy these disorders, if the judiciary and administrative authorities, well convinced of the utility of the measures already taken, would preserve a constant watchfulness, and not permit them to be almost immediately forgotten. But in effect, these abuses are renewed in all their force, and no legal process has been instituted against the relapse, up to the present time.

B. E.

Memoir of the Iodates and Chlorates of the Vegetable Alkalies. By M. Serullas. Translated from the Journal de Chimie Medicale, by Franklin R. Smith.

I. Iodates.

I have detailed the action of morphia upon iodic acid. It is known that an immediate decomposition of the acid takes place, evinced by a considerable separation of iodine, and that I have pointed out this as a method to distinguish morphia from the other vegetable alkalies. It was then important to examine the habitudes of these bases with the same acid, the result of which is, that they combine to form saline compounds generally well determined.

Iodate of quinia.—Saturate the dissolved iodic acid with quinia. The liquor being concentrated and filtered hot, crystallizes on cooling, in the same manner as the sulphate of this base, that is to say, in silky needles. These crystals are quickly decomposed by heat, leaving a charry residuum.

Iodate of cinchonia presents itself in very slender prismatic crystals, grouped into very regular and very white amianthoid tufts. This iodate is instantly decomposed by heat, the residuum swelling up and charring.

Iodate of strychnia.—Heat moderately a solution of iodic acid with strychnia; the liquor acquires the wine-red colour. This solution concentrated, placed in a dry place after filtration, gives, if the strychnia be pure, long transparent needles united into bundles, having a superficial rose colour; washing upon a filter with a very small quantity of cold water decolours them. They are very soluble in water, and are immediately decomposed by heat.

If the strychnia be impure, the distinctness of the crystals will be variable.

I had at first thought that the colour which results from the action of the iodic acid dissolved and heated with strychnia depended upon the presence of a portion of brucia, which is frequently found mixed with it; but I have

observed that very pure strychnia of Boliquet's preparation, which did not redden at all by nitric acid, has afforded a colourless and perfectly crystallized iodate, whilst the mother-water was excessively coloured. This effect, therefore, may be noted as a character belonging to this iodate. The iodate of strychnia, like all the salts of that base, is a violent poison. Rabbits were killed more or less promptly by one and a half grains.

Iodate of brucia.—Brucia combines with iodic acid, but the product has not the form of distinct crystals. The solution has a red colour. If small acicular crystals are formed at first, they are owing to the presence of magnesia, which forms an iodate but little soluble. This happens also in the preparation of iodate of strychnia. Nitric acid colours iodate of brucia of a bright red.

Iodate of veratria.—The solution of iodic acid and veratria being evaporated, takes by the desiccation the appearance of gummy matter under a crystalline form, as has been observed of the compound of veratria with other acids.

Narcotine and picrotoxine are soluble in iodic acid by heat, without neutralizing it. By evaporation these two substances crystallize in the midst of the solution of the acid, which contracts no union with them.

It should be observed that the results will vary much unless pure matter be operated upon, and as most of the alkalis of commerce are impure, it is necessary before employing them, (except they be of one's own preparation), to dissolve them in concentrated alcohol; filter to separate foreign matter and crystallize. Strychnia should be purified by the proper method.

The above mentioned iodates are more or less soluble in water and in alcohol. By heat some at first melt; the most of them are immediately decomposed, with a slight explosion, in this case affording, beside the gaseous products, iodine and a considerable deposit of carbon. Iodic acid being susceptible of detonating by percussion, it is conceived that the iodates should possess the same property.

The sulphurous acid poured cautiously upon these substances, that it may not be in excess, separates the iodine, as it does with all the iodates. Ammonia precipitates the base.

A generic character of the iodates of the vegetable alkalies is the property of precipitation on the addition of a slightly concentrated solution of iodic acid to the neutral solutions. A very acid-iodate is immediately formed, which settles to the bottom after a few moments, and may be separated by decantation. These acid-iodates are colourless; lightly washed and dried they detonate readily at a temperature a little elevated. Some of them have exploded by the friction of a metallic blade used to detach them from the sides of the vase, to which they adhered. No charry residuum remains after their detonation, the excess of acid consuming the carbon. Exposed to the air, they change after a certain time, and acquire more or less colour.

The principal object of the preceding remarks is to show the very remarkable difference which the iodic acid presents in its contact with morphia and the other alkaloids, at ordinary temperatures. We see that morphia, whether free or combined, exerts upon this acid a very prompt decomposing action, whilst the other bases, notwithstanding the analogy of decomposition which exist between them, unite with it to form salts heretofore unknown. Their existence being now published, the healing art may perhaps find some use for them. Is it not possible that we may obtain from the vegetable alkalies, thus combined with acidified iodine, and more especially from the compounds of quinia and cinchonia, remedial properties different from those produced by the sulphates of these two substances, and to direct usefully, by a well measured application, the energy, often disastrous, of the other alkaloids?

We may the more reasonably expect this, since in the present instance the iodic acid which saturates the vegetable alkalies, in abandoning so easily the iodine by the contact of organic matter, at a slight elevation of temperature, differs so materially from the sulphuric acid, the permanency

of which is well known; consequently, these iodates may be expected to produce particular effects, differing from those by the sulphates.

Mr Donn , a young and industrious chemist, in his researches upon the alkaloids, has characterised iodine, brome, and more particularly chlorine, as powerful antidotes to the poisons of this class. He has proposed to distinguish the vegetable bases from one another by means of microscopic observation of their crystalline forms, obtained by spontaneous evaporation of their solutions in concentrated alcohol. I believe, after the trials that I have made, that the same method applied to the iodates and chlorates of the alkaloids offers results equally constant and proper, to recognise the nature and base of either.

II. *Chlorates.*

The combination of chloric acid with the alkaloids is easily effected by heating the acid with these bases. The resulting salts are very remarkable in their crystalline forms; like the preceding, they are more or less soluble in water and alcohol, at ordinary temperature, and much more so by heat.

The presence of lime or magnesia, so frequent in the alkaloids of commerce, presents less inconvenience in the preparation of chlorates than of the iodates, because the chlorates of lime and magnesia are very deliquescent, whilst the iodates of these bases are very little soluble.

Chlorate of morphia.—Long and very slender prisms decomposed immediately by heat, leaving a residuum which swells up and chars. Nitric acid colours it yellow, and not red, as happens with the other salts of morphia.

The chlorate of morphia acts as promptly upon the iodic acid as the other salts of that base. The iodine is equally set free, an effect which we did not anticipate; the analogy between the iodic and chloric acids leading us to infer that the combination of morphia with the chloric would prove as permanent as with the iodic acid. This fact generalises the character of iodic acid with regard to morphia, wherever it may be found.

Bromic acid also appears to be decomposed by morphia. I caused a little of this acid to act upon morphia; the liquor took a yellowish colour, which deepened as the evaporation proceeded, without affording any crystals.

Chlorate of quinia.—Very slender prisms united into tufts. Heated, it melts into a colourless fluid, which solidifies on cooling, taking the appearance of a transparent varnish. If the heat be continued it is suddenly decomposed with the usual explosion.

Chlorate of cinchonia.—Prisms in handsome large plummy tufts of a beautiful whiteness. Heat effects almost the same changes upon it as upon the preceding salt, only it is less fusible and sooner decomposed.

Chlorate of strychnia.—The solution acquires a rose colour by heat. The salt crystallizes in the form of delicate short prisms, grouped *en rosette*. If the solution is concentrated, it forms a mass on cooling.

Chlorate of brucia.—Diluted chloric acid being heated with brucia to effect the combination, the liquid acquired a red colour, and crystallized on cooling into perfectly regular transparent rhomboids, precisely similar to carbonate of lime. These crystals, separated from the liquid, are still a little reddish, but may be obtained colourless by a new solution and crystallization; the liquid acquires no more colour; the salt is little soluble, less so than chlorate of strychnia, which permits their easy separation.

The chlorate of brucia, like brucia itself, has the property of reddening deeply by nitric acid. It is suddenly decomposed by heat.

Chlorate of veratria does not crystallize, but is reduced by evaporation to a layer of a gummy aspect, and an amber colour.

If a somewhat concentrated solution of iodic acid be poured into a solution of one of the above mentioned chlorates, it immediately forms a curdy precipitate of an acid-iodate, which may be entirely separated by strong alcohol. The chloric acid remains in the liquid, for if the chlorate is

dissolved in water, the alcohol which is added becomes so much weakened by the mixture, that no precipitate ensues; but it may be determined immediately by the addition of iodic acid, which alone is not disturbed by weak alcohol, although it is precipitated almost entirely by strong alcohol, and a long repose.

To ascertain the correctness of these views, iodic acid, and afterwards concentrated alcohol, were poured into a solution of one of the chlorates of the alkaloids; it was there thrown upon a filter and washed repeatedly with alcohol. The matter remaining upon the filter being dissolved in water, was saturated with pure potassa and evaporated. The residuum, heated to redness in a tube, was dissolved and treated by nitrate of silver, then by ammonia, and filtered to separate the iodide of silver. Nitric acid being now added in excess, produced no disturbance, whilst the same course pursued with the alcoholic solution, set aside, saturated, evaporated, &c. afforded an abundance of chloride by the nitrate of silver.

It was a natural inference on seeing the chloric acid displaced from its combination with the alkaloids by the iodic acid, by reason of the formation of an iodate, but little soluble, that the deliquescent chlorates, such as those of lime and magnesia, in like manner should give a precipitate of an iodate of these bases and free chloric acid; and such is the fact.

Further, in applying the principle of very different solubilities, I treated by iodic acid a solution of chlorate of potassa, a salt of much greater solubility than the iodate. By concentration and crystallization, if the iodic acid be in excess, we obtain an acidiodate; if the contrary, a neutral iodate. Then, by pouring into the remaining liquid concentrated alcohol, you precipitate any chlorate of potassa which may be present, and have pure chloric acid.

Iodic acid, added in sufficient quantity to the watery solution of sulphate of quinia, made by means of sulphuric acid, throws down an acidiodate. The portion of acidiodate that

remains in solution may be separated by concentrated alcohol, which retains the sulphuric acid.

The *hydrofluoric acid* enters into combination with the alkaloids. The results are the same whether the simple or silicated acid be employed; if the latter, the silex is separated in the process. The salts formed redden litmus paper, and when the solutions are hot, very strongly. Sulphuric acid poured over them disengages hydrofluoric acid.

The *hydrofluat* of *quinia* has a shining white colour, and crystallizes in very slender needles. A solution of boric acid, boiled with quinia, gives, by cooling, a borate of quinia in granular crystals. When a solution of quinia or cinchonia, with a large excess of either simple or silicated hydrofluoric acid, is submitted to spontaneous evaporation in a stove, they dry into the form of a transparent varnish, which being redissolved, is excessively acid, and repasses to its primitive state by a new desiccation.

Boric acid in excess with quinia has afforded by a like evaporation a matter resembling varnish.

Analysis of the iodate and chlorate of cinchonia.

Two decigrammes of iodate of cinchonia, dissolved in a sufficient quantity of water, gave by ammonia,

Cinchonia dried with care, the mean of many experiments, - - - - - 1.136 dec.

The liquid treated by caustic potassa evaporated, and the residue heated to redness, afforded by nitrate of silver, and washing with weak nitric acid,

Iodide of silver	1 dec. =	} silver, 0.4686 iodine, 0.5314
------------------	----------	------------------------------------

representing,

Iodic acid,	0.7014 =	} iodine, 0.5314 oxygen, 0.1700
-------------	----------	------------------------------------

On making a comparison between the known compositions of sulphate and iodate of potassa, we find the proportion in weight from the first to the second to be :: 1 : 4.1. The same relations appear to exist between the sulphate

and iodate of cinchonia ; therefore we may establish the composition of the latter as follows:

Iodic acid,	6.97	34.85
Cinchonia,	13.03	65.15

Two decigrammes of the chlorate of cinchonia, treated in the same manner, excepting the modifications which the difference between a chloride and an iodide require, gave the mean of many experiments,

Cinchonia,	1.52		
Chloride,	0.70	{	Chlorine, 1.73
			Silver, 5.27
		representing	
Chloric acid,	0.368	{	Chlorine, 0.173
			Oxygen, 0.195

which leads us again, after the relation of the composition of the chlorate and sulphate of potassa, where the sulphuric and chloric acids are, :: 1 : 1.86, to give that of the chlorate of cinchonia

Chloric acid,	0.404	19.48
Cinchonia,	1.596	80.52

On the Preparation of the Schweinfurt Green. By Creuzburg, Chemist, at Octingen.

[Abstracted from KASTNER'S ANNALS, vol. xviii. page 285.]

The Schweinfurt green was first employed in the arts in the year 1816. It is the finest green the arts possess, and is extensively used in Germany.

This pigment has, until now, been improperly considered as an arsenite of copper. According to Mr Creuzburg's opinion, it is a triple combination of arsenious and acetic acids with the oxide of copper. Mr C. explains this re-

action in the following manner : " verdigris is a compound of subacetate of copper and an excess of oxide of copper ; the arsenious acid combines with the free oxide and with a portion of that of the subacetate, which is converted into the state of a neutral acetate combining with the arsenite of copper thus formed. In support of his theory Mr C. has ascertained that the acetate of copper existing in the Schweinfurt green contains exactly the neutral acetate that corresponds with the quantity of subacetate which has been employed."

Such are the process and interesting details that Mr C. has been good enough to communicate to the public. Of all the different processes that have been proposed, he considers that which is given in Kastner's Annals, vol. xii. page 446, as the best and most practicable. It consists in dissolving arsenious acid in boiling water, treating this solution with verdigris, and boiling the whole until a precipitate is formed. All the other methods have been tried by this gentleman and rejected by him as defective. Thus the employment of sulphate of copper has been acknowledged as bad, and yielding a more than indifferent product.

The difficulties encountered in this preparation consist especially in a *tour-de-main*, peculiar manipulation, which is still kept a secret by the manufacturers. The following conditions must be scrupulously attended to, in order to obtain a handsome colour : the proportions of arsenious acid and verdigris must be eight parts of the former and ten or eleven of the latter ; the arsenic must be dissolved in one hundred parts of boiling water, and the verdigris, formed separately in a soft paste or *magma*, with a sufficient quantity of water, must be mixed and boiled with the solution of arsenious acid ; but this operation requires the most particular attention, for the slightest circumstance produces considerable alterations in the shades of the product.

The solution of arsenic should be boiling when the verdigris is added to it, and the ebullition suspended during

the time the mixture is made. A precipitate of a dull yellowish green colour is produced, which, by a protracted ebullition, assumes the beautiful colour called Schweinfurt green; but the pigment thus afforded has not a shining appearance; it resembles a mixture of the superfine article with twenty per cent. of pure alumina. This is the first and a very great disappointment. Another, which is no less important is, that the precipitate thus obtained is very considerable, and retains the water which is mechanically incorporated with it so as to dry very slowly.

To avoid these failures, the operation should be carried on rapidly over a smart fire, and no more than two minutes ought to elapse between the introduction of the verdigris into the arsenical solution and the formation of the precipitate. The slower the reaction takes place the duller the colour. When the operation is rapid, the precipitate, instead of being light and voluminous, is compact and heavy; it falls down at once, instead of forming slowly.

When the precipitate has subsided, a blue liquor, disengaging a good deal of acetic acid, floats on the surface. With a compact precipitate this liquor becomes clear at once, and may be decanted without danger of carrying away or even disturbing the colour. This liquor is preferable to pure water for dissolving the arsenious acid which is to be used in the subsequent operations. By treating the arsenic with water, the first boiling affords commonly a dirty precipitate, which ultimately unites with the pigment and tarnishes its lustre: but, however, there is no advantage, according to the experiments of Mr Creuzburg, in using that liquor for diluting the verdigris.

The *magma*, or verdigris paste, is prepared by mixing gradually a sufficient quantity of water at 40° centigrade, (108° Fahr.) and stirring incessantly the mixture until it has acquired a sufficient degree of consistence to be able to pass through a common-sized hair sieve; but it is necessary not to go beyond this limit for two reasons, which contribute to render the addition of a larger proportion of

water very injurious to the result : first, the temperature would be too much reduced ; secondly, the verdigris seems to undergo a modification in its chemical composition by too great a dilution in water, and affords a brown precipitate. The temperature of the water should never be beyond 108° , and the *magma* must be still warm when added to the arsenical solution.

The verdigris of Grenoble is preferable to that of Montpellier. The former is harder and contains a larger proportion of neutral acetate of oxide of copper, whilst the other is more contaminated with impurities, and cannot be easily pulverized. These foreign matters remain incorporated with the pigment, and form in it small black specks. When the Montpellier verdigris is employed it ought simply to be reduced into pieces of the size of a walnut.

It is also very important to have the arsenious acid pulverized for the purpose, because the common pulverized arsenic is very seldom pure, and is generally adulterated with sulphate of baryta, sometimes even in the proportion of fifty per cent.

Such is the abstract of the information given by Mr Creutzburg. It is well calculated to remove the difficulties and precariousness of this preparation, and to instruct those who may wish to undertake the manufacture of this article.

—*Translated from the Annales de l'Industrie Française et Etrangère.*

E. D.

Minutes of the College.

At a meeting of the Philadelphia College of Pharmacy, held June 29th, 1830, it was resolved that a public commencement be held for the purpose of conferring degrees on the candidates for the diploma of the College, and that Dr Benjamin Ellis, Joseph Reakirt, and William Marriott, be a committee to make the necessary arrangements for carrying the same into effect.

September 28th, 1830. The College is informed, through the minutes of the board of trustees, of the election of Samuel Elliott to associate membership.

The following report was read and accepted, and the committee continued for further attention to the subject.

To the Philadelphia College of Pharmacy.

The committee appointed at the last meeting to make the necessary arrangements for carrying into effect the resolution of the College, *viz.* "that a public commencement be held for the purpose of conferring degrees on the graduates of the College," report, that Henry Troth, Esq. one of the vice presidents of the institution, has very kindly complied with their request to deliver an oration on that occasion, and they propose that the commencement be held on the 25th of October, at seven o'clock in the evening, or at such hour as the College may appoint. All of which is respectfully submitted, and your committee beg to be discharged.

Signed, BENJ. ELLIS,
JOS. REAKIRT.

The semiannual election for Trustees resulted in the choice of the following gentlemen:—Dr Benjamin Ellis, Algernon S. Roberts, Charles Schaffer, Jun., Samuel P. Griffiths, Jun., Samuel F. Troth, Dr George B. Wood, William Hodgson, Jun. and Joseph Scattergood.

October 26th, 1830. The Committee continued from last meeting report,—that a Public Commencement was held on the 25th inst. and an address delivered by Henry Troth. Three of the four graduates attended, and received their diplomas.

On behalf of the Committee,

BENJ. ELLIS,
JOS. REAKIRT.

Resolved, that the thanks of the College be presented to Henry Troth for his interesting address on that occasion; that a copy of the address be requested for publication, and that the same be referred to the Publishing Committee.

A communication being made to this College by Dr George B. Wood, on behalf of the "Publication Committee of the Convention, for the formation of an American Pharmacopœia, requesting the College to examine the revised edition of that work prepared by them, it was

Resolved, that a committee of three be appointed to confer with the Publication Committee on the subject; and that Daniel B. Smith, Henry Troth, and Dr Benjamin Ellis constitute that committee.

November 30th. A communication from William Hodgson, Jun. on the Compound Syrup and Fluid Extract of Sarsaparilla, was read and referred to the Publishing Committee.

December 28th. The following report from the Committee appointed to confer with the "Publication Committee of the National Convention," was read, adopted, and the Committee discharged.

To the Philadelphia College of Pharmacy.

The committee appointed to examine the revised edition of the Pharmacopœia of the United States, having carefully performed that service, report,—that the convention of physicians appears to have subjected the Pharmacopœia of 1820 to a severe scientific scrutiny, and the work now offered to the examination of the College is greatly improved, in almost every respect, upon the former. The Committee, therefore, unanimously agree to recommend to the College to pass a resolution approving of the same, and enjoining upon its members to observe the formulæ thereof in their pharmaceutical preparations.

DANIEL B. SMITH,
HENRY TROTH,
BENJ. ELLIS.

Philadelphia, 12th Month 21st, 1830.

It was on motion resolved, that this College do approve of the revised Pharmacopœia of the United States for 1830, prepared by the convention of physicians which met at Washington in January of the present year; and that the members of the College be recommended to use the formulæ thereof in their pharmaceutical preparations.

The following was also adopted:

Whereas information is received that a School of Pharmacy is founded by the College of Pharmacy of New York, in which regular lectures on pharmaceutical science are delivered and diplomas granted; and whereas the interests of science would be promoted by establishing a friendly intercourse with that College, therefore,

Resolved, that a regular apprenticeship with a member thereof, and the attendance of one full course of lectures in that School of Pharmacy, be sufficient to entitle a student who may attend one full course of lectures in the School of Pharmacy in this College, and undergo the required examination, to receive the degree of Graduate of Pharmacy therein.

Resolved, that the corresponding secretary be directed to communicate the foregoing resolution to the president of the College of Pharmacy of New York, and to request, on behalf of this College, that the favour may be made reciprocal.

CHARLES ELLIS,
Secretary.

Review.

The Pharmacopœia of the United States of America, by the authority of "the General Convention for the formation of the American Pharmacopœia," held in 1830. Second Edition: from the First Edition, published in 1820, with Additions and Corrections. New York: published by S. Converse. November, 1830.

If there be any other department of learning than the revision and correction of the text of writers in the classical languages of antiquity, in which a spirit of severe criticism may be laudably indulged, it is in the examination of such a work as a Pharmacopœia. The preparation of a "code of medicines," is, in the present state of science, a task requiring microscopical minuteness of research, accurate learning, and extensive practical knowledge. Europe may be said to abound in Pharmacopœias of great merit, suited to the uses of particular districts. Each of these contains, in addition to what may be called the common stock of medicines, that, peculiar to its own locality, and therefore marking it with distinctive characters. Neither is there any want of works of great learning and value upon the natural and chemical history of drugs. Some of the most eminent natural philosophers of the age have not thought it beneath them to illustrate the science of pharmacy by their labours; and there is therefore no excuse left but indolence or ignorance, for any gross errors in so important a work as

a Pharmacopœia. The skill displayed in its compilation may for this reason be viewed by strangers as no unfair index of the state of science in the community which is satisfied with the performance ; for in a work requiring, not extraordinary talent, but merely patience, research, learning and accuracy, we may rest assured that the skill which the public sentiment requires will soon be brought to the task. We are therefore disposed to examine every work of the kind which issues from our press with jealousy, and to give it a close scrutiny, and we seize the present, which is our first opportunity of vindicating the rights of the Journal of the College of Pharmacy to sit in judgment upon so important a matter.

In the first place, we have a right to expect in a Pharmacopœia, the most lynx-eyed revision of the press. Not an error in a letter or a figure should be suffered to escape uncorrected. Secondly, the Pharmacopœia should be complete in itself and symmetrical in its parts. Every medicine used in its formulæ should be found in its list of officinals ; the name given in the officinal list should be observed in giving the titles and ingredients of the compounds. The scientific nomenclature should be in accordance with the knowledge of the age ; clear references of authority should always be given ; synonyms should be marked as such ; and the part of the animal, plant, or mineral used, should be strictly noted. A wrong process is an unpardonable blunder. The language should be terse and unequivocal. There may be various opinions respecting the value of formulæ for the pharmaceutical preparations, but the points we have been considering are capable of being accurately estimated, and we shall therefore, in examining at some length the work before us, confine ourselves chiefly to them.

The American Pharmacopœia of 1820 was marked throughout with the carelessness and undue haste of its preparation. The prospect of a revision rendered the medical public patient of these defects, and as the authors of the

edition before us profess to have used every endeavour to render it worthy of the profession in this country, and of the present advanced state of medical science, we presume that the whole work is adopted by them as their own. We shall point out, as we proceed, the principal changes which have been made in the arrangement, nomenclature, and preparations.

The compilers of the Pharmacopœia of 1820, adopted, for reasons into which we shall not here inquire, the name of the drug as its officinal title, and added the scientific name of the plant or animal as explanatory. The authors of the present work return, in the greater number of cases, to the nomenclature of the London College, yet with singular carelessness leave the names unaltered throughout the body of the work, presenting one set of names in the catalogue of materia medica, and another in the lists and formulæ of preparations. For example, the Pharmacopœia of 1820 call scammony, scammonium. The present work styles it, "scammonii gummi resina," yet gives us *confectio scammonii*, and not *conf. g. r. scam.* which should be its title on the principles adopted in the nomenclature of the materia medica. It is needless to point out how much this discrepancy disfigures the book. A further alteration has been made by incorporating in the materia medica short descriptions, of from one to five or six lines in length, of the qualities and properties of the drugs. These descriptions are so short and general as to be of little value, useless to the apothecary, because they do not in general enable him to discriminate one drug from another, and to the physician, as being altogether in short general terms. The Pharmacopœia of 1820 arranged its catalogue in two columns; the first of which contained the Latin, and underneath that, the English name of the medicine; and the second the scientific name of the plant, animal, or mineral which yields it, the authority for the name, and the part of the plant or animal employed in medicine. This arrange-

ment is natural and perfectly intelligible and harmonious. The work before us, however, discards the latter two of these. We are not told the authority for a single scientific term, nor, except where it forms part of the name of the medicine, are we informed in general what is the part used. Take, for example, the article *ichthyocolla*, which reads thus in the old work—

Ichthyocolla, Acipenser huso, and some other species. Vesica natatoria, the swimming bladder.

In place of this necessary information to the student we simply have—

Ichthyocolla, Acipenser huso, et

Isinglass, *Acipenser ruthenus*.

It is time to turn from these general observations to a more detailed examination of particulars. The first change we have to remark upon is that in the species of aconitum. Stoeck, who first introduced the aconite, supposed that the species he used was the aconitum napellus, and the plant was so designated in the British Pharmacopœias. It has been since ascertained that he employed the neomontanum, and the compilers of the Dublin and American Pharmacopœias adopted that as the officinal species.

The very accurate and learned editor of the Pharmacopœia Batava, in noticing this error of Stoerck, says of the A. neomontanum, "Recte a Pharmacopœia Americana receptum, usu ceteris prius." The present editors have restored the A. napellus as their officinal species, without any other reason, we suspect, than that they so found it in the London Pharmacopœia. This, we think, is a retrograde and not a forward step, as respects "the present advanced state of medical science."

We meet on the same page with the aconite, the singular scientific synonym, alcohol *officinale*, and should be glad to be informed in what modern work on chemistry alcohol is so designated. A more serious criticism upon this article is,

that it does not give us the specific gravity of standard alcohol, nor are we once informed of it throughout the work. The same remark may be made respecting sulphuric acid, and what renders the omission the more singular is, that the old Pharmacopœia designates it in both cases.

In page sixteen we find aloes called extract of socotrine and hepatic aloes. Now we submit that *aloes* is the name of the extract and not of the plant.

The socotrine is said to be yielded by the *A. spicata*, *A. socoterina* and *A. perfoliata*, and the hepatic or Barbadoes aloes, by the *A. vulgaris*, *A. hepatica*, and *A. barbadensis*. We doubt whether the two latter are the names of well ascertained and admitted species. Although it is known that several species of the genus furnish aloes, it is most probable that the aloe *spicata* and aloe *perfoliata* furnish those kinds which are met with in commerce. Nineteen-twentieths of the aloes used in this country come from the Cape of Good Hope, and yet our editors do not notice that peculiar well defined variety of the drug.

Alum is said to be a bi-sulphate of alumina and potassa. The composition of this salt is not clearly understood, although the most probable opinion is, that it is a sulphate of alumina combined with a sulphate of potassa, or, as others think, with a bi-sulphate of potassa. In neither case is the name here given correct.

Antimonium sulphuretum is neither good Latin nor correct nomenclature.

Aqua distillata is introduced very improperly into the materia medica, in place of *aqua fontana*, it being properly one of the *præparata*, among which, accordingly, we again find it.

Baptisia tinctoria. This plant is strangely called *indigo brown*, instead of its proper name, *wild indigo*.

Boletus ignarius should be *B. igniarius*.

The proper kind of lime stone to be used in the preparations should have been designated, as many contain a large proportion of *silex* and *magnesia*. Here, also, the present

edition departs unwisely from the old, which designated chalk and marble as the kinds to be used. It should have said crystalline or primitive limestone.

Both the former and latter work are deficient in designating what is meant by phosphate of lime, which occurs as a native mineral in large quantities. They should have defined it to be *calcined bones*, which is the article that is always used.

Under the head of cantharides, the synonyms of Olivier, Linnæus, and Fabricius for that insect are given as the names of insects used in medicine. There is nothing said to distinguish them as mere synonyms from the names of different insects. A similar remark may be made of the scientific names of the cardamom seeds, and many other articles which refer to the same plant, while those appended to the article camphor and some others, refer to widely different substances, and yet no distinction between the two cases is pointed out.

Cloves are said to be the unexpanded buds of the E. C. They are the unexpanded *flower* buds.

The red and yellow cinchonas are still referred to the *C. cordifolia* and *C. oblongifolia*, although it is now well ascertained that these species of Mutis yield only the inferior red and yellow barks of Carthagena.

Cornu cervi is referred to the *cervus elaphus*, the European deer. We think that our own *cervus virginianus* is better entitled to a place in our national Pharmacopœia than any foreign species.

A singular blunder occurs in page 33, where elaterium is said to be *elaterii pepones*! The physician who should follow the book, and give half a grain or a grain of the pepones, would be sadly astray.

The *erigeron canadense* is the only species of *erigeron* given, although, as far as we have any knowledge, the species used are the *E. philadelphicum* and *E. heterophyllum*.

Of the *punica granatum*, the bark of the root and the rind of the apple are both used. The book simply says pomegranate bark, without designating which of the two is meant.

Guaiacum is called a resin, although it is well understood to be a peculiar vegetable principle.

Of *Iodine* it is said that at 347° F. it rises in a beautiful violet-coloured vapour. The fact is, that iodine melts at 225° F., enters into ebullition at 347° F., but sublimes slowly at temperatures below that of boiling water.

The bark of *the root* of sassafras is the part used, although it is not so designated.

Under the head *Opium* we are told that its active principles are *two alkaline* substances termed *morphia* and *narcotine* ! Apart from the disputed point, as to the power of narcotine upon the living system, it is very clear that it is no alkali.

Petroleum is said to be called scientifically *bitumen petroleum*. The term bitumen is a generic appellation ; and is applied in strictness to the solid bitumens rather than to the bituminous oils. The term petroleum is strictly correct for the mineral tar, and bitumen petroleum as a scientific term is inadmissible.

In the description of phosphorus it is said to take fire at 148° F. ; whereas, it is well known that it inflames by friction at a much lower temperature.

Pinus australis is given as the name of the officinal species, in place of *pinus palustris*, the name adopted in the old Pharmacopœia. The change is certainly injudicious, for Pursh, Elliot, Muhlenberg, Nuttall, Torrey, and all our most accurate botanists have rejected the appellation of Michaux, and termed the species referred to the *P. palustris*.

The pipsissewa is called a *pyrola* ; but we think the character upon which Pursh founded his genus *chimaphila* is too natural and well defined to be rejected ; and it has, with the exception of Sir J. E. Smith, been sanctioned by succeeding botanists of eminence.

We venture to raise a doubt respecting the Latinity of *rhi* as the genitive of *rhus*. It is so declined we know in Ainsworth, and Pliny and Celsus are cited as authorities ;

yet, in the chapter of Pliny which is quoted, the ablative of rhus is written *rhue*, from which we infer that it must be of the third declension. It is obviously derived from the Greek *ῥοις*, which makes *ῥοος* in the genitive.

Under the article Rhubarb it is stated, that the East Indian, or Chinese, occurs in oblong flattish pieces, *seldom perforated*. This information will undoubtedly be new and interesting to our apothecaries!

The *rosa gallica*, which was omitted in the former Pharmacopœia, is very properly restored to its place in the materia medica. Yet even here, in the very act of correcting, we observe the characteristic carelessness of the editors; for in the description given of the *rosa centifolia*, with a reference, as we presume, to the error in the former edition, it is said that the *rosa centifolia* is used only in making rose-water and *syrupus rosæ*. Let the reader turn to the chapter on syrups, and he will find that there is no syrup of roses among the preparations.

Salix eriocephala. We decidedly object to making this willow the officinal representative of the American salices. It is described, we know, by Bigelow as the *swamp willow* of New England; but Michaux, who is the only other author in whom we have found it described, speaks of it as a native of Illinois; and neither Pursh, Nuttall, nor Torrey, recognise it as a species.

The super-carbonate of soda of the shops is a sesquicarbonate, and not a bi-carbonate of soda.

Borax, which from its alkaline taste was formerly called a sub-borate, is now ascertained to be a *bi-borate*, and not a *borate* of soda, as stated here.

The *spigelia marilandica* is translated Carolina *bark*!

Sponge is said to contain *phosphate of iodine*! a very curious discovery truly; we shall perhaps be told next of *phosphate of oxygen*. The truth is, it contains, according to a late careful analysis, the carbonates of lime, magnesia, and ammonia, hydrochlorate of soda, *ioduret* of iron, and traces of *phosphate* of soda.

The systematic name of amber is said to be *succinum electrum* ! which is probably a misprint for *succinum electricum*, the term used by Linnæus in his *Systema Natura* ; but who now quotes Linnæus as an authority in mineralogy ?

The virtues of tobacco are supposed to reside in a peculiar proximate principle termed *nicotric*. By whom, pray ?

The winter's bark is left without its scientific cognomen, which is nevertheless ascertained. It is the *drymis winteri* of Forster and De Candolle.

There are several of the botanical names in this catalogue of *materia medica*, the propriety of which seems doubtful.

Myrrh, for example, is referred to the *balsamodendrum kataf*. Forskhal is the traveller upon whose authority this determination rests. He described the plant which he was informed yielded myrrh, under the name of *amyris kataf*. This was subsequently placed in a new genus and named *balsamodendrum kataf*. A recent German traveller, Ehrenberg, actually gathered the myrrh on a distinct species of the same genus, which has received the name of *B. myrrha*, and is therefore entitled to the preference.

With respect, also, to *myrospermum* (p. 21) as the genus of the plants yielding the balsams of Tolu and Peru, it is most probable that along with the *Toluifera* of Linnæus this genus must be merged in the *myroxylon* of later writers. Humboldt, Mutis, and Lambert, all attribute these balsams to different species of the latter genus.

Kino is attributed (p. 41) to the *pterocarpus erinacea* and the *coccoloba uvifera*. The former plant yields the African kino of Dr Fothergill, which is not found at present in commerce ; and the extract furnished by the latter is called *false kino* by the continental writers. There is another sort of the true kino which is sometimes seen in this country, brought from the East Indies, which is obtained from the *nauclea gambir* ; a fourth sort, procured in New

Holland from the *eucalyptus resinifera*; and a fifth from an Indian tree, the *butea frondosa*.

We have not exhausted our critical notes on the nomenclature of this part of the work, but must content ourselves for the present with observing that it is disfigured by gross typographical blunders; for example, *Acidum hydro-cloricum*, p. 14; *Myroxolon* for *myroxylon*, p. 21; *Caryophyllata*, p. 25; *Cassia pulpa*, p. 26; *Cinchonia*, p. 28; *Curcuma langa*, p. 32; *Gualtheria procumbers*, *gentiania*, p. 26; *Marubium*, p. 44; *Villosæ*, p. 54, as the genitive of *villosus*; *Criocephala* for *eriocephala*, p. 55; *Sclerotium flavus* for *S. clavus*, p. 57; *plunt* for *plant*, p. 60; *Taraxici* and *taraxicum*, p. 62; *tatty* for *tutty*, p. 66. We may remark, by the way, that the description of this latter substance is not very accurate. *Emmenagogue* is spelt throughout the whole book with a single m.

In turning from the *Materia Medica* to the *Preparations*, it may be observed that the editors of the present edition have improved many of the formulæ by conforming them to the London Pharmacopœia. In so doing they have avoided a gross blunder into which the convention of 1820 fell. They adopted as their general standard the formulæ of the Edinburgh college, in which the quantity of liquid used is given by weight and not by measure. They substituted measure for weight, however, in copying these formulæ, without making the requisite allowance for the difference between troy pounds and wine pints; so that the tincture which originally was made with two wine pints in the London Pharmacopœia, and with two and a half troy pounds in that of Edinburgh, was ordered in the American to be prepared with two and a half wine pints! Another error of the Pharmacopœia of 1820 was the neglect to distinguish between troy and fluid ounces, or between weights and measures in the formulæ containing liquids of different specific gravities. The editors have corrected this mistake in the present edition, and have been so unnecessarily precise in their anxiety to be accurate, that in every case where a

liquid is ordered by the pound, they direct it to be *a pound by weight*. A number of new and useful formulæ have been introduced, although the book is very far from fulfilling in this respect the expectations held out in the preface. Among the new preparations may be mentioned those of the sulphates of quinia and morphia, and strychnia.

It is very extraordinary that no processes are given for obtaining either of these alkaline principles, the discovery of which is undoubtedly the most important acquisition our science has gained in modern times. This is the more inexcusable as the mode of preparing them is described in all the modern treatises, and especially as they are not enumerated in the list of *materia medica*.

The first change which strikes the eye in this part of the work, is the omission of the Latin directions and explanations prefixed to many of the subdivisions of the work in the old Pharmacopœia, and the substitution of new ones in English. The Pharmacopœia, as a work in the Latin language, is thus mutilated; and the change has been made in a very careless and superficial manner; thus, under the head of Distilled Oils, there are no Latin directions for their preparation, and yet the Latin reader is informed, "*hoc modo paranda sunt.*" To descend again to particulars.

The proportions used in making the *acetum scillæ*, are very properly changed to those of the London college, viz. two ounces to the pint.

The *strong acetic acid* is also a new and very proper addition to the preparations.

The *acetum distillatum* of the old edition is called *acidum aceticum dilutum*, and is ordered to be made from *acidum aceticum impurum*, which in their list of *materia medica* is the *scientific synonym* of vinegar, their pharmaceutic term for which is *acetum*. The old Pharmacopœia did not fall into this incongruity.

The formula for the purified vinegar of the old work is retained, and is used in preparing the medicated vinegars. We are sorry to find it here, and had hoped that it would

be rejected from every future edition as a useless and abortive recipe.

Diluted sulphuric acid is very properly altered to about half the strength of the former edition, being the standard of the London college.

The convention of 1820 did not direct their sulphuric ether to be rectified, an omission we are glad to see supplied in this edition.

The liquor aluminis compositus of the London Pharmacopœia is introduced, page 74, yet the water is altogether omitted!! The quantities of alum and white vitriol ordered, require two pints of boiling water.

The ammoniated alcohol is also altered from the Edinburgh to the London formula; so that it is now an alcoholic solution of subcarbonate of ammonia and not of ammonia. The disadvantages of this change are obvious, for we cannot obtain so strong a solution of the salt in diluted alcohol as of the alkali.

The mode of preparing the solution of carbonate of ammonia is altered to the simpler plan of the London and Edinburgh colleges, viz. by dissolving the subcarbonate.

In making the hydrosulphuret of ammonia, the present and former editions both direct the sulphuretted hydrogen to be prepared from sulphuret of antimony and dilute muriatic acid. Had the editors condescended to try the experiment, they would have discovered the impossibility of obtaining a single cubic inch of the gas by this method. The London college directs the gas to be made from *sulphuret of iron* and dilute muriatic acid, a process which succeeds perfectly. Many of the books on chemistry order sulphuret of antimony to be *heated* with *strong* muriatic acid, which is also a good mode of preparing it. In attempting to combine the two, our American editors have contrived a formula which is absolutely worthless.

In the preparation of aerated waters it is directed to impregnate them with ten volumes of gas. We doubt whether our strongest seltzer waters contain more than six or eight times their bulk of carbonic acid.

The absurd direction of the former Pharmacopœia for making lime water with boiling water is no longer retained.

Cerates are defined to be compounds of oil, &c. of a consistence between plasters and ointments. Yet the recipe for simple cerate, page 85, is altered by omitting the spermaceti, and increasing the proportion of wax, so as to render it identical with their own simple ointment, p. 157.

The confection of cassia is altered to the London formula. The confection of roses is made with the astringent *rosa gallica*, and not with the laxative *rosa centifolia*—one of the strange absurdities of the old Pharmacopœia.

The decoction of Peruvian bark is made with a pint of water to the ounce, instead of a pint and a half.

The decoction of sarsaparilla is altered from six ounces to eight ounces per gallon.

In turning to the chapter on plasters we are struck with another example of the superficial manner in which this revision has been made.

Purified ammoniacum and galbanum are directed to be used in several cases; but in no part of the book is the apothecary told how they are to be purified, nor do they enter, except in their crude state, into the list of *materia medica*. We may remark, in passing, the definition given of plasters, viz. that they are adhesive solid compound substances *spread* upon leather, linen, or silk! Are they not then plasters if spread upon paper or muslin, or when in rolls? Among the new formulæ under this head, we are tempted to quote one as a model of pharmaceutic brevity.

“*Emplastrum galbani*,

R. *Galbani quantumvis!*”

The English translation directs *purified galbanum*.

We are glad to see the compound galbanum plaster restored to its place, and could wish the *emplastrum thuris* had been given in place of the *emplastrum ferri* of the old Pharmacopœia, which is very properly omitted.

The lead plaster is made with five parts of litharge, instead of four, to eight of oil, and the directions are more clear and precise for the preparation than in the former edition.

We have at the end of the plasters a new preparation of tobacco, translated snuff plaster, instead of tobacco plaster, as it undoubtedly should be.

Among the extracts we have those of lettuce, poppy, and taraxacum, from the London Pharmacopœia, one of sanguinaria, which is a new and useful addition to our officinals, and one of the spiræa tomentosa.

The rob of elder is very inappropriately placed in both Pharmacopœias among the extracts. If preserved at all, it should rank with the confections.

Several obsolete preparations of iron are omitted, but we cannot praise the retention of the red oxide. It was admitted into the former Pharmacopœia because of its use in the emplastrum ferri, which is omitted in the present work. It is not used as a medicine, and enters into no officinal preparation. Its place would have been well supplied by the sulphate of iron, which should always be prepared for internal use by the apothecary himself.

The process for making calomel is taken from the London Pharmacopœia, and is nearly that of Hermstædt, differing from it in using less muriate of soda, although there appears to be enough, according to the scale of equivalent numbers. Proper precaution is taken in the recipe to get rid of any accidental bichloride.

The infusion of flaxseed is ordered to be made with flaxseed meal! The mucilage is well known to be contained in the outer skin of the seed, and to be yielded perfectly by the unbruised seed, which makes a far nicer and more palatable infusion, free from the oil which the bruised seed yields abundantly.

The Latin formula for infusion of roses very properly directs the *rosa gallica*; the English is a copy from the old Pharmacopœia, and directs "*roses*:" another striking proof of the haste with which this revision has been made.

Among the liniments we have a *liniment of* iodine which deserves notice, and is made with one part of the tincture of iodine and eight parts of soap liniment.

The soap liniment is altered so as to contain twice as much soap and four times as much camphor as before.

The musk mixture is omitted ; although often ordered of the apothecary by the practitioner, and for that reason, if for no other, deserving a place.

Mixtures of sulphate of morphia, sulphate of quinia and croton oil are introduced ; the two former by the improper titles of *mixtura morphiæ* and *mixtura quiniæ*. The former of these contains a grain of the sulphate in a drachm of the mixture.

The mixture of the sulphate of quinia contains two grains to the ounce ; which we think much too dilute. A grain to the drachm is a more common and convenient proportion.

In page 118 they have copied from the London college a recipe for mucilage of starch—which article they have not made officinal !

The editors have apparently bestowed more care upon the chapter "*Pilulæ*" than upon any other part of the preparations, having added twelve new formulæ and stricken out seven. Among those introduced are the pills of strychnia, sulphates of quinia and morphia, piperine, croton oil, lupuline and iodine. The latter of these, by the way, appears to us to be a very injudicious form of preparing and administering iodine. We never have seen any lupuline which could be formed into a mass fit for dividing into pills *per se*.

We cannot commend the addition of Dover's powder to the calomel pills. It may be a very useful recipe in its place, but the introduction of it has deprived the *Pharmacopœia* of the simple calomel pill, an important and much used preparation.

The editors have attempted to improve the pills of corrosive sublimate of the former edition, without much success. It would be difficult to select an example of more complete failure than that, in the attempt to contrive a formula. The convention of 1820 appear to have added the muriate of ammonia with the intention of rendering the

sublimate soluble in a small quantity of water, and thus securing its exact distribution throughout the mass. As regards the mere subdivision of the salt, this might have answered their purpose ; but then the chemical relations of the two salts were overlooked, and it was not recollected that a triple muriate, having peculiar properties of its own, was formed. But the process by which they attempted to accomplish this did not at all answer their expectation ; instead of dissolving the sublimate in the solution of muriate of ammonia, they first mix it with arrow-root and direct it to be made into pills by moistening with a solution of the ammoniacal salt. The idea of forming the pills with arrow-root—a substance insoluble and immisceable in cold water, was altogether absurd. So far as the mere mechanical part of the process goes, the editors of the present edition have avoided these errors. Their formula is still, however, liable to the censure of the editors of the *Pharmacopée Universelle*, who, after introducing the preparation under the title of “*pilules mercurielles ammoniacales*” observe “*C'est à tort que la Pharmacopée d'Amerique donne à ces pilules le nom de pilulæ hydrargyri oxymuriatis. La formule elle-même est mauvaise, et doit être rejetée.*”

The pills of compound extract of colocynth of the first convention contained a fourth part of oxide of antimony, and are much used in this city by the name of Fothergill's pills. In the present edition the name is retained, but the antimony is omitted.

The *strong acetic acid* is directed to be prepared from *sugar of lead*. On turning to that article in page 127, we find that it is to be made with *strong acetic acid* ! So that the apothecary is first to buy sugar of lead for making acetic acid, and then to use the acetic acid thus obtained for making sugar of lead for his shop.

The recipe for preparing acetate of potassa is liable to objections. In the first place, it is not clear what acid is to be used, for the book is divided against itself ; the Latin student being ordered to use purified vinegar, and the

English, distilled vinegar. The preparation of acetate of potassa by either of these is a troublesome and difficult process, and is to be excused in the old book only on the ground that it contained no better acetic acid. There can be no excuse for not using the strong and pure acetic acid, which is officinal in the present edition, and with which the salt in question is easily and beautifully made.

Subcarbonate of potassa is ordered to be made from the impure supertartrate, which is not in the list of officinals. The subcarbonate is also inserted among the *materia medica*.

Both editions direct sulphate of potassa to be made from the salt which remains after the distillation of nitric acid, and yet contain no process for the preparation of that acid. It is truly surprising that so gross a blunder as this should have passed into a second edition !

The carbonate of soda is directed to be made by passing a stream of carbonic acid through a solution of the subcarbonate, which, though better than the method used in the first edition, is not in advance with the knowledge and practice of the day.

The strength of the spirit of camphor is double that of the old *Pharmacopœia*.

The syrup of poppies of the London *Pharmacopœia* is advantageously introduced into the present edition ; but the capsules of the poppy are not in the list of officinals.

The syrup of quinia should have been prepared with the same proportion of tincture of sulphuric acid used in the mixture of quinia. The sulphate of quinia is not soluble in syrup, and forms a hard coherent mass in the course of a few days. It is not strong enough for the convenience of the practitioner ; a grain to a drachm would be a better formula.

¶ In the syrups of sarsaparilla and of sarsaparilla and guaiacum, p. 140, the old edition is copied verbatim, and the species of roses to be used is not distinguished. We presume it should be the *rosa centifolia*.

The tincture of aloes and myrrh is very judiciously conformed to the London formula; the change made in the composition of this valuable tincture by the convention of 1820 was ill advised.

On page 143 the *extract* of *liquorice* is directed to be used, although not elsewhere noticed in the work.

The tinctures are in general made to agree with the London standard, which is, we think, decidedly the best.

In no other case is this so clear as in the preparation of tincture of muriate of iron, in which about half the quantity of acid formerly ordered is now used, thus rendering the evaporation to get rid of the great excess of acid unnecessary, and furnishing besides a milder and more uniform tincture.

We must again notice the use of articles in the preparations which are not enumerated in the *materia medica*, viz. the red saunders, p. 135, prunes and figs, p. 87.

The tincture of colombo, a valuable and popular preparation, is unaccountably omitted.

The tincture of guaiacum of the old Pharmacopœia was made with one pound of the guaiacum to two and a half pints of alcohol; it is reduced in the present book to three ounces to the pint.

The tincture of hops is also reformed; that of the former edition was a clumsy mode of preparing tincture of lupuline. In the directions in the present work for preparing this latter tincture, the lupuline, which they define to be a yellow powder, is ordered to be *bruised*! The mode of preparation is somewhat singular; an ounce of lupuline is to be digested for six days with two fluid ounces of alcohol; the liquor is then to be pressed out and filtered, and enough alcohol added to make three fluid ounces. The virtues of the lupuline would have been more effectually extracted by adding the whole of the alcohol previous to the digestion, and we see no reason whatever for deviating from the usual mode of proceeding, especially as the solution is so strong an one.

The tincture of myrrh is directed, as in the old Pharma-

copœia, to be made with diluted alcohol, a process which no skilful apothecary will ever follow.

Laudanum is restored to the London standard, an alteration which we think is conformable to the practice of the best apothecaries. We are glad to perceive that Dr Harts-horne's acetic tincture of opium is introduced, p. 149, and wish it had entirely superseded the black drop, an uncertain and wasteful preparation. The name which they have bestowed upon the black drop, viz: impure acetate of morphine, is, by the way, most unchemical and unpharmaceutical.

In looking over the ointments, we perceive that the simple ointment of galls is exchanged for one containing camphor; and that the ointment of rose water, an elegant and useful preparation, is omitted. The unguentum hydrargyri nitratis fortius is made with too much lard. Had the editors been practical apothecaries, or had they attended to the criticisms of A. T. Thompson on this preparation, they would have given us a better formula.

The proportions directed for the unguentum hydrargyri nitratis mitius, which immediately follows the former, afford another example of the extremely superficial manner in which this work has been edited. The Latin text directs it to be prepared "*eodem modo ex adipe et oleo triplici*"—according to which direction the ointment contains one part in sixteen of nitrate of mercury. The English text, on the other hand, says it must be made "in the same way with three times the quantity of lard," which will make an ointment containing one part in ten of the nitrate. The unguentum picis is directed to be made, as it should be, with suet, and not with wax, as in the old edition. An ointment of iodine is introduced containing one part of iodine to eight of lard.

The antimonial wine is copied from the last edition, and the solvent employed, viz: wine and water, is but a poor substitute for good Teneriffe wine. When proper care is taken in the selection of the tartar emetic and the wine, the preparation will remain for months unaltered; but by mak-

ing it so nearly a watery solution as is here directed, the spontaneous decomposition is much facilitated.

The colchicum wine is directed to be made with two ounces of the recent bulb to a pint of wine. It may be objected to this formula, that the recent bulb cannot be generally procured in this country, and that the tincture is too weak. The first objection lies against the recipe of the old Pharmacopœia, but we prefer its proportions, viz: one part in two, to those in the present edition.

It is only in its dried state that the American apothecary can procure the colchicum; and amidst the uncertainty as to the degree of solubility of its active principle and the extent of the injury it suffers in drying, we much prefer what may seem a wasteful and extravagant mode of preparing the wine, so as to be certain of obtaining a saturated tincture. We have accordingly been in the habit, for some years, of preparing our wine of colchicum with one part of the dried bulb and two parts of Teneriffe wine; and we have always succeeded in obtaining a tincture of great efficacy and certainty in its operation.

The directions given in both editions for the preparation of acetate of zinc are curiously inconvenient. The quantity of this salt which the apothecary is directed to make at each crystallization is *one drachm*! If it be said that the proportions are nevertheless correct, we answer that the quantity of water is so immoderately great, that, for the preparation of a pound of the acetate, the sulphate of zinc and acetate of lead are to be dissolved in twenty gallons of water, and this is afterwards to be nearly all evaporated before the salt will begin to crystallize. A single gallon of boiling water would undoubtedly be enough for the purpose. If it be asked how the convention stumbled upon these quantities, we refer to the London Pharmacopœia where these proportions and quantities, and the same process (excepting the evaporation) are used for making the solutio acetatis zinci; they copied it, as they did too many other formulæ, without adequate reflection.

The oxide of zinc is directed to be made by precipitation

from the sulphate, and not by sublimation from the metal, as in the last edition.

We may remark that this portion of the work is also much disfigured by typographical errors, many of which are repeated in the index.

In the examination to which we have subjected the work before us, we have confined ourselves chiefly to a comparative view of its merits as compared with the former edition. Although the simple circumstance of having gone through the revision with the London Pharmacopœia in their hands as a standard, has enabled the editors to correct a number of injudicious formulæ, yet we are decidedly of the opinion that, upon the whole, they have utterly failed in their undertaking. The work is in many respects decidedly inferior to its predecessor, and that in the very points where improvements and superiority were to be expected. It has evidently been prepared in haste, and the attention of the editors directed to a few prominent points, to the neglect of others of as much real importance. Even in the additions they have made of the new chemical medicines, they have omitted one of the most useful and important—the hydriodate of potassa; nor have they taken any notice of the disinfecting chlorides.

With all these imperfections the work could not, under any circumstances, gain the confidence of the profession, nor be received as the general standard. The transactions connected with its history are calculated still further to impair public respect, and to dispose us to receive with favour the Pharmacopœia prepared by the Washington Convention of 1830. In our next number we hope to have the opportunity of subjecting that work to the same close scrutiny we have bestowed on this. We shall then take occasion to enter into a more elaborate criticism of the value of the formulæ of both Pharmacopœias than it has been in our power to do in the present article, which is already protracted to an undue length by the severity with which we have felt ourselves compelled to scrutinize the minor details.

Miscellany.

On Salicine, by MM. Jules Gay-Lussac and J. Pelouze.—Salicine, when pure, is a perfectly white substance, crystallized in prismatic needles. Its taste is very bitter, with something of the aroma of willow bark.

100 parts of water, at the temperature of 19.5° (67° F.) dissolve 5.6 parts of salicine. Heat increases its solubility, and boiling water appears to dissolve it in all proportions. It is also soluble in alcohol, but ether and the essential oils, at least that of turpentine, appear not to take up the least portion.

Concentrated sulphuric acid poured upon salicine gives it a fine red colour, perfectly like that of bichromate of potassa. Hydrochloric and nitric acids dissolve without colouring it. Gall nuts, gelatine, neutral acetate of lead, alum and tartar emetic do not precipitate it from its solutions.

Boiled in excess with lime water it does not saturate it; it is not capable of dissolving the oxide of lead.

It melts at some degrees above the temperature of boiling water, and on cooling forms a crystalline mass. It loses no water in this operation. If the heat be pushed a little beyond the point of fusion, it acquires a citron yellow colour, and the brittleness of resin.

Salicine burned with the oxide of copper, in an exhausted apparatus, afforded a gas entirely absorbable by potassa. The mean of two careful analyses gives for its composition,

Carbon	55.491	} 100
Hydrogen	8.184	
Oxygen	36.325	

Or in proportionals,

Carbon	2.028	proportionals
Hydrogen	2.004	
Oxygen	1.	

Salicine then is composed of

Two	proportionals of Carbon,
Two	do. Hydrogen,
One	do. Oxygen,

Or it may be represented by two volumes of olefiant gas, and one volume of oxygen.

Preparation of Salicine.—M. Becquerel has read to the Royal Academy of Sciences a note on the preparation of Salicine, sent to him by M. Peschier of Geneva. The author in the first place endeavours to ascertain which species of willow affords the most salicine.

The white willow, (*Salix alba*, Lin.) from the bark of which some journals have

announced that MM. Fontana and Rizatelli had procured salicine, contains but a very small quantity, susceptible of crystallization, for like that of the *S. hastata* and *S. præcox*, it is uncrystallizable and excessively bitter.

The bark of the young branches of the *Salix monandra* variety of the *S. helix*, though he subjected it to the most rigorous operations, had afforded him but two drachms to the pound of dried bark, whilst M. Leroux said that he had obtained four times as much, and hoped, when he operated upon a large scale, to double that. It is true that he employed branches of three or four years, whereas M. Peschier has not been able to procure any except those scarcely a year old.

The narrow leaved willow, *Salix incana*, Lin. is rather richer in salicine than the preceding, but of most difficult extraction, owing to the mucilaginous and colouring matters with which it is united. M. Peschier effected its extraction as follows:

After being bruised, the bark was boiled in water for one or two hours, and filtered by expression. To the liquid, subacetate of lead was added until no further precipitate ensued, then filtered, and carried it to the boiling temperature, adding a sufficiency of carbonate of lime to decompose the excess of acetate of lead which it contains, to saturate the acetic acid and to decolour it. The liquid was permitted to become clear, decanted, and the deposit washed two or three times. These solutions being united and filtered, were evaporated to the consistence of an extract. This, whilst hot, was submitted to pressure between folds of bibulous paper, then treated with alcohol of 34°, filtered, and about one third of the menstruum distilled off. By a skilful evaporation of the remainder, the salicine was in very pure pearly white crystals, like those presented by M. Becquerel to the Academy. M. Peschier asserts that the addition of sub-carbonate of potassa to the decoction of the bark and the current of sulphuretted hydrogen, as proposed by M. Roux, should be discarded; for the potassa appears to offer no other advantage than to render the decoction less viscid, whilst its employment occasions the use of a much larger quantity of subacetate of lead. The carbonate of lime by itself both decomposes the superabundant salt of lead and saturates the acetic acid.

Julia Fontenelle, who appears to have drawn up the above account of the preparation of salicine, adds that himself, and likewise M. Quesneville, the son, had found traces of sulphate of lime in the salicine presented by M. Becquerel.—*Journal Chimie Med. September 1830.* F. R. S.

Ioduretted Hydriodic Acid an agent to distinguish Rhubarb.—According to M. Geiger, the ioduretted hydriodic acid gives, with the several varieties of rhubarb, different colours, which enable us to distinguish them, viz.

1 Russian rhubarb,	green,
2 Chinese,	brownish,
3 English or pseudo-Russian,	deep red,
4 French,	blue.

The same author thinks that by iodine we can determine whether rhubarb will keep a long time or not.

This conservation depends on the greater or less quantity of amylaceous fecula which it contains; it keeps worst when the fecula is in large proportion.—*Jour. Chim. Med. Sept. 1830.*

Analysis of the Leaves of Uva Ursi.—M. Meissner has obtained from 1000 grains of these leaves,

1. Gallic acid,	10 grains,
2. Tannin, with a little gallic acid,	29 "
3. Tannin,	335 "
4. Resin,	44 "
5. Chlorophyllin,	63½ "
6. Extractive with acid malate of lime, traces of hydrochlorate of soda, &c.	33½ "
7. Extractive and citrate of lime,	8½ "
8. Gum, obtained by potassa,	157 "
9. Extractive, obtained by potassa,	176 "
10. Woody fibre,	96 "
Water,	60

Jour. Chim. Med. Sept. 1830.

Examination of the Milky Juice of the Fig.—According to M. Geiger, the juice of the fig tree is composed, 1. of elastic gum differing from caoutchouc, 0.03 or 0.04; 2. of a resin insoluble in ether; 3. of gum, 0.02; 4. of albumen; 5. of extractive; 6. of small quantities of sulphates, hydrochlorates, and other salts formed by the vegetable acids; 7. of an odorous substance; 8. of water.—*Ibid.*

Analysis of the Cocoa Nut.—The liquid contained in the nut, analysed by M. Buchner, consisted of water, albumen, sugar, free phosphate of lime, and a volatile principle. The white substance lining the interior of the nut, according to the same author, contains, in the 100 parts,

Water,	31.8
Stearine and elaine,	47.0
Albumen containing phosphate of lime and sulphur,	4.33
	3.0
Gum and salts,	1.1
Insoluble ligneous fibre,	8.6

Ibid.

Analysis of Balsam of Mecca, by M. Tromsdorff.—500 parts of pure balsam furnished

1. Volatile oil,	150
2. Neutral resin, insoluble in alcohol,	20
3. do. soluble in do.	320
4. Colouring extractive matter, bitter,	2
5. Loss,	8

This analysis confirms our previous accounts, that the fluid resin of the Mecca balsam tree contains no benzoic acid; consequently, it should not rank with the balsams.—*Ibid.*

Analysis of Copaiba.—M. Gerber, of Hamburg, has analysed the pale yellow copaiba, and obtained the following results:—Volatile oil, 41; a brown resin, insoluble in cold petroleum, 2.18; a brittle yellow resin, soluble in cold petroleum, 51.38; water, 5.44.

When the copaiba becomes old, it undergoes some changes, according to M. G.; a part of the volatile oil appears to be transformed into a brown resin. Thus the analysis of old copaiba furnished the following results:—Volatile oil, 31.7; soft brown resin, 11.15; brittle yellow resin, 53.68; water and loss, 4.10.

Purity of Balsam Copaiba.—The best test of this, according to M. Gerber, is the caustic ammonia, which furnishes at once a clear solution, whilst the solution with potash does not become clear until after some time. The addition of a very small quantity of fatty oil renders the ammoniacal immediately cloudy and thicker.—*Lond. Med. and Surg. Jour. from Apotheken Archives des tom. XXX.*

Centaaurine.—At a sitting of the Society of Pharmacy of Paris, 14th of July 1830, M. Dulong of Astrafort, pharmacien, announced the presence of a new product from the centaury, possessing powerful febrifuge properties, and which he designates hydrochlorate of centaaurine. MM. Thenard and Magendie were appointed to examine it.—*Journal de Pharmacie, Aug. 1830.*

Powdering Phosphorus.—M. Casaseca remarks that the method of pulverizing phosphorus mentioned by all chemical authors, is that of agitation for some time in water, in a well corked bottle; but he observes, the powder obtained by this method is very imperfect; whereas if alcohol of 36° be used instead of water, a powder of the utmost fineness is produced, which has a crystalline appearance, and on agitating the liquid in the sun, the bottle appears to be entirely filled with a light brilliant powder.—*Philosoph. Mag. from Journ. de Pharmacie, April, 1830.*

Analysis of Mustard Seed.—Baume, and after him MM. Deyeux and Thiberge, have stated the existence of sulphur in the essential oil of mustard. MM. Henry, Jun. and Garot found among other principles a peculiar acid, which they called *sulpho-sinapic acid*.

After showing that the substance on which these chemists operated could not be pure, on account of some atomic discordances in the compounds it is stated to have formed with various bases, M. Pelouze maintains that the acid is merely the *hydrosulphocyanic*, existing in the state of sulphocyanuret of calcium; it appears, however, that the sulphur which the seed contains does not exist entirely in this state, but also uncombined; for when the seed is boiled with potash, acetate of lead shows the presence of sulphuret of potassium.

Hydro-sulphocyanic (or rather sulphocyanic acid) may be obtained from the seed by the direct action of dilute sulphuric acid upon strong decoctions of it, but the quantity is small. The following is given by M. Pelouze as the composition of mustard seed:—volatile oil, fixed oil, yellow colouring matter, albumen, (crystallizable white colouring matter, discovered by MM. Henry and Garot) bitartrate of lime, citrate of lime, sulphocyanuret of calcium, and uncombined sulphur.—*Philos. Mag. from Ann. de Chim. June 1830.*

Odoriferous Troches for Fumigation.

Take of Benzoin in tears,	$\frac{1}{2}$ oz.
Storax calamita,	4 sc.
Dry balsam of Peru or Tolu	2 dr.
Cascarilla,	4 sc.
Cloves,	$\frac{1}{2}$ dr.
Powdered charcoal,	$1\frac{1}{2}$ oz.
Nitrate of potassa,	1 dr.
Volatile oil of orange flowers,	
Tincture of ambergris,	aa $\frac{1}{2}$ dr.
Mucilage of gum tragacanth,	q. s.

Form the whole into a paste and shape it into little cones or triangular nails, about an inch high. Preserve them dry. By applying fire to the extremity they burn without flame, spread an agreeable perfume, and may be used to fumigate the chambers of the sick.—*Virey's Pharmacy.*

Electuaries, Confections, &c.—Ligneous vegetable powders (those of woods, roots, leaves, and flowers) absorb three parts of syrup or honey in order to form an electuary; and although they appear at first too liquid, yet they soon swell and absorb all the redundant moisture. The dry gum-resins require their weight of syrup, and the pure resins less than their weight; mineral substances (not soluble, as the salts) take half of their weight, and the neutral salts rather less. It may be remarked, that the pulps, extracts, and deliquescent salts, which enter into electuaries and confections, ought to diminish the proportions of syrups, honey, or other liquid that may be employed.

Quantities of Syrup absorbed in Electuaries by different substances, according to Baume.

1 part of vegetable powders	absorbs	3 parts of syrup.
1 " gum resins	1	"
1 " resins	0.75	"
1 " mineral substances, such as antimony and calomel,	0.50	"
1 " neutral salts	0.33	"
1 " deliquescent and alkaline salts	0.10	"
1 extracts, pulps, electuaries, &c.	0	

In the acidulated tartrate of potash and iron, made by mixing equal parts of cream of tartar and iron filings, it is proper at first, in consequence of the mutual reaction of the two substances, to add but one part of syrup, on the next day to add a second part, and three days afterwards the addition of a third part may be made, in order to form an electuary.—*Ibid.*

Almond Paste for the Hands.

Take of Almonds, sweet,	4 oz.
do. bitter,	4 oz.
Lemon juice,	2 oz.
Water,	1 oz.
Oil of sweet almonds,	3 oz.
Brandy of 19 or 20 degrees, (B.)	6 oz.

The mass remaining after the emulsion of almonds has been made, may be employed for this purpose, though the perfect kernels are the best. To the almonds broken, are to be added gradually the lemon juice and oil, and afterwards the spirit to prevent fermentation, and the appearance of insects, which are very fond of this compound. It must be preserved in a covered vessel, and a small piece employed to wash the hands or face. It is said to render the skin very white and supple.—*Virey's Pharmacy.*

Dentifrice of Coral and Quinia.—J. Pelletier directs the following proportions:

Take of Red coral in fine powder,	1 oz.
Carmine lake,	8 grs.
Sulphate of quinia,	4 grs.
Volatile oil of mint,	2 drops.

Make the mixture according to art.—*Ibid.*

Resino-saponaceous Mixtures.—Dr Plenck of Vienna devised the formulæ for these mixtures. Water does not precipitate the resinous molecules when added to a compound of resin and soap dissolved in alcohol:

Soap of the Resin of Guaiacum.

Take of Resin of guaiacum,	$\frac{1}{2}$ oz.
White soap of the sweet oil of almonds,	1 oz.
Rectified alcohol, (of 32° B.) q. s. or	8 oz.

Pulverise the resin and rasp the soap. Put them with the alcohol into a closed vessel, and digest.—Filter, and preserve the liquid tincture, or evaporate to dryness. One gramme (about 16 grs. troy) of this dry soap, or four times the quantity of the liquid, may be given for a dose in atonic gout or rheumatism, in any proper vehicle.

Soap of the Resin of Jalap.—This is prepared in precisely the same manner and proportions; but the dose of the tincture may be from 1 dr. to 1½ dr., in any mucilaginous drink—or in the dry state 10 or 20 grs. It purges freely and without pain, and has no disagreeable taste.

The above preparations are certainly elegant, and it is very probable would answer a useful purpose as remedies.

Observations on the Vegetable Milk furnished by the Palo-de-vaca. By M. Cotteau.—The Spaniards, from the first period of their establishment on the coasts of South America, became acquainted with the vegetables which furnish this singular species of milk; but being little instructed in natural history, they confounded the milk proper for the nourishment of man with other laetescient juices, which, exposed to the air, promptly harden, and form the substance known under the name of caoutchouc. There are many trees on this continent and in the Antilles which furnish caoutchouc. Dr Rouillin, one of the most distinguished naturalists of the age, who visited this part of the globe, was acquainted with four species of *hevea*, and five or six trees or shrubs belonging to other families, which afford a gum elastic more or less perfect. Those vegetables which yield a potable milk are not so numerous, nor so widely diffused. For a long time the single species described by Humboldt was all that was known—the *galactodendron*. M. W. Arnatt made known a second, which is a *taberuencontana*. It appears that there is also a third, for according to Dr Rouillin, who furnishes these interesting details, there is in the province of Choco, a milk-producing tree, which certainly is not the *palo-de-vaca*, and which, by his statement, does not appear to belong to the family of Apocinees.

So far as is known at present, the geographical distribution of the *palo-de-vaca* is limited to the north side of those mountains which branch off from the eastern chain of the Andes, near the Lake of Maricaibo.

It is a large tree, with hard and coriaceous leaves, and being often found growing in a stony soil, its roots creep on the surface which it cannot penetrate.

It would almost appear as if it could not derive from the ground sufficient nourishment for its support; nevertheless, if at the proper season its bark be wounded, there will issue an abundance of milk, of a beautiful colour, a balsamic odour, and agreeable taste, and without other inconvenience than being a little clammy. The people of the country often drink a cup of the milk under the tree in the morning, and sometimes make a more complete breakfast by crumbling into it some pieces of cassava, or other article.

If the milk of the *palo-de-vaca* be exposed to the air, it soon becomes covered with a membrane of considerable thickness, yellowish, stringy, very much like caseum, and almost as elastic as caoutchouc. This coagulum, to which the natives give the name of cheese, sours in a few days, and exhales an odour which closely resembles, in some respects, spoiled cheese. M. de Humboldt, who had not the means of making an exact analysis during his journey, judged that the characters which we shall enumerate, indicated with sufficient clearness, the presence of caseum and caoutchouc. His opinion was common to most other chemists at the time, that the chief difference between vegetable and animal milks was, that in the former caoutchouc occupied the place of butter in the latter. There exists a close analogy between these two fluids, but it is in different points from those suspected by Humboldt.

In 1823 two able chemists, MM. Boussingault and Rivero, visited the same localities where Humboldt had made his observations, and possessing the advantage of a more complete apparatus, made a very satisfactory analysis, of which the following is an extract:

The milk of animals it is well known readily coagulates by the addition of an acid; but in that of the *palo-de-vaca* the admixture of a large proportion produces no coagulation; so far from it that the addition of a few drops of acid will retard

for a long time the decomposition of this lactescent juice, although exposed to the open air.

No precipitate is occasioned by the addition of ammonia, a fact which indicates the total absence of caoutchouc. If this vegetable milk be placed over the fire, it behaves itself in a manner very much resembling that of the cow; *i. e.* a pellicle soon forms on its surface, which prevents evaporation, and occasions the fluid to foam over the sides of the vessel.

When the fluid parts are slowly dissipated, we procure a sort of cream cake, and if the heat be continued small drops of an oily appearance collect on the surface of this extract, and as the number augments, the coagulum finally floats in the midst of them, which hardens progressively and diminishes in volume. At this moment an odour is perceived strongly resembling outlets when taken from the fire. The oily liquid, when cold, assumes the form of a white translucent mass, altogether similar in appearance to blanché bees-wax, and possessing absolutely the same chemical properties. Dr Rouillin states, that MM. Boussingault and Rivero made candles of it, which burned exceedingly well.

The liberated coagulum which swims in the fluid wax is not soluble in alcohol, and this property enables the operator to separate from it the wax which adheres to it. By washing it several times in boiling alcohol, and decanting it promptly, there remains finally a white fibrous mass, soluble in dilute muriatic acid, which manifests the same properties as fibrine extracted from animal matters.

If a small quantity of alcohol be poured on the milk of the *palo-de-vaca*, it occasions disturbance, and it may then be filtered. The liquor thus obtained contains much water, a little sugar, a salt of magnesia, which is not an acetate, and a colouring principle. This vegetable milk contains neither albumen, caoutchouc nor caseum. This latter principle is supplied by the fibrine, whilst the wax, in its composition, performs the same rôle as the butter does in the milk of animals.—*Jour. de Chimie Medicale*, July 1830. B. E.

Drusium, Resin of Oak.—Mr Lemaire de Liancourt has discovered a new substance in the bark of several species of oak—in those, especially, known by the specific name of *quercus robur* and *Q. pedunculata*. He has called this new substance *drusium*, or *oak resin*. It is found in the form of vermiculated lines of the size of a sewing thread, or in small masses of the bulk of millet seed. It is transparent when recent, and of a bright yellowish red colour, losing gradually both these physical properties by exposure to the dampness of the air, and becoming brown and opaque. The atmospherical moisture renders it soft, dilates its tissue, and converts it into a fine mouldiness of a white colour, which indicates the presence of vegetable mucus and gum.

Mr Lemaire has found this substance to contain a resin and an alkaline matter, and considers it as a gummo-resinous substance, analogous to ulmine, by its propensity to become hydrated. It seems to be produced by a natural combination of the *succi proprii* of the oak. It exudes, especially, from trees from ten to twenty years old, has no sensible smell, and does not seem to contain the balsamic benzoic matter which is emitted from ignited oak. Mr L. thinks this semi-tonic substance might become an useful therapeutical agent.—*Archives Générales de Médecine*.

INDEX TO VOLUME II.

Acetic ether, constitution of,	82
Acid, acetic, its purity,	155
benzoic, do.	155
citric, do.	156
citric from gooseberries	81
hydrochloric, its purity,	156
hydrocyanic, do.	156
its density with various proportions of water,	157
kinic,	229
kinic, and principal combinations with salifiable bases,	227
nitric, its strength,	157
oxalic, lozenges of,	251
pinic, a constituent of Venice turpentine,	81
silvic, from the fir tree,	82
sulphuric and alcohol, mutual action of,	73
Address by the vice-president,	258
Adulteration of drugs,	155
acid, acetic,	155
benzoic,	155
citric,	156
hydrochloric,	156
hydrocyanic,	156
nitric,	157
sulphuric,	157
ammonia	157
Angustura bark,	157
antimony,	242
bark of pomegranate root,	246
borax	243
canella alba and winter's bark,	246
carbonate of lead,	243
castor,	244
catechu,	243
chlorate of potassa,	244
chromate of lead,	244
of potassa,	245
copaiva,	245
guaiacum wood,	247
gum arabic,	247
senegal,	247
tragacanth,	247
sulphuric ether,	246
wax,	245
Alba canella and winter bark,	246
Allinson, Samuel, jun., on seneka oil,	35
Alkaloids, vegetable, chlorates and iodates of, by M. Serullas,	301
Almond paste for the hands,	342
Amadine, note upon, by M. Guibourt,	49

Ammonia, its purity,	157
Analysis of balsam of Mecca,	339
cocoa nut,	339
copaiba,	340
milky juice of the fig,	339
mustard seed,	340
uva ursi leaves,	339
iodate and chlorate of cinchonia,	307
Angularis sabbatia,	213
Angustura bark, test of,	157
effects of reagents on true and false,	158
tree, or orayuri, by Dr Hancock,	50
Animal charcoal in glandular affections,	162
pastilles of,	162
Antidotes to the vegetable alkalies,	83
Antimony, adulterations of,	242
Aqueous solution of the extract of sarsaparilla,	65
Arabic, gum, sophistication of,	247
Aromatic syrup of rhubarb, by E. Durand,	218
Artificial ultramarine,	136
Balsam of copaiva, analysis of,	340
purity of,	340
of Mecca, analysis of,	339
Bark, Angustura,	157, 158
of pomegranate roots,	246
winter,	246
Baume's hydrometer,	286
Benzoic acid,	155
Beral, M., on plaster cloths,	166
on some formulæ for preparations of sarsaparilla,	64
Blistering plaster,	166
with cantharides,	166
without	167
Blondeau, A., on the extraction of morphia, by fermentation,	219
Blue colouring matter of lapis lazuli,	136
Bogota, styrax of, by M. Bonastre,	163
Borax, manufacture of,	243
Brande, T. W., on the mutual action of sulphuric acid and alcohol in the formation of ether,	73
Bromine, chlorine and iodine, antidotes to vegetable alkalies,	73
and its combinations, by Charles Lowig, translated by E. Durand,	89, 169
Bromine and aluminum,	177
antimony,	179
arsenic,	178
barium,	174
bismuth,	179
borax,	101
calcium,	175
carbon,	98
chlorine,	103
chrome,	177
copper,	182
cyanogen,	169
gold,	185
hydrogen,	97
iodine,	103
iron,	181
lead,	181
magnesium,	176
manganese,	178
mercury,	183

Bromine and metals,	170
nitrogen,	104
organic bodies,	186
oxygen,	96
phosphorus,	101
platinum,	186
potassium,	172
selenium,	102
silver,	184
sodium,	174
sulphur,	101
tin,	180
water,	95
zinc,	80
Buena,	240
Canella alba and winter bark,	246
Cantharis, some indigenous species of, by E. Durand,	271
Cantharides, growth and developement of,	255
Carbonate of lead, purity of,	243
Castor, adulteration of,	244
Catechu sophisticated,	243
Centaurine, active principle of centaury,	340
Charcoal, animal, in glandular affections,	162
pastilles of,	162
Chinioidine, non-existence of,	161
Chiococca racemosa, active principle of,	84
Chlorates and iodates of the vegetable alkaloids,	301
Chlorate of brucia,	305
cinchonia,	305
morphia,	304
potassa, adulteration of,	244
quinia,	305
strychnia,	305
veratria,	305
Chlorine, iodine and bromine antidotes to vegetable alkaloids,	73
Chromate of lead adulterated,	244
potassa, combinations,	245
Cinchona containing iron,	216
kinate of,	232
confounded with other genera and species, notice of, by De Can-	234, 290
dolle,	237
condaminea,	294
danais,	291
exostemma,	293
hymenodyction,	237
lancifolia,	294
luculia,	239
macrocalyx,	239
macrocarpa,	239
magnifolia,	293
pinckneya,	238
pubescens,	290
remijia,	237
serobicalata,	107
Cinchonia, analysis of iodate and chlorate of,	81, 156
Citric acid,	249
Clemson on piperine,	339
Cocoa nut, analysis of,	159, 311
College, minutes of,	9, 89, 169, 257
Communications, original,	341
Confections, electuaries, &c.	

Copaiva,	84
analysis of,	340
purity of,	340
adulterated,	245
and magnesia,	162
Coral and quinia dentifrice,	342
Cough lozenges of Tronchin,	250
Coxe's hive syrup,	110
Cuisinier, sudorific syrup of,	67
Decandolle's notice of genera and species whose barks have been confounded with cinchona,	234, 290
Decoctum diureticum,	109
pectorale corroborans,	109
senega,	108
sabbatia angularis,	215
Dæbereiner's glass of strontia,	252
soluble glass of,	252
Dover's powder,	250
Drusium, or resin of oak,	344
Drying narcotic plants, mode of,	253
Durand, Elias, on bromine,	89, 169
moxas, &c.	206
spiced syrup of rhubarb,	218
some indigenous species of the genus cantharis of Latreille,	271
Ellis, Benjamin, M.D. on weights and measures,	111, 188
Charles, on hemlock resin,	18
on the presence of iron in powdered cinchona,	216
Ether, acetic, chemical constitution of,	82
formation of, and nature of the process, by W. T. Brande,	73
sulphuric, preparation of,	246
Ergot of maize,	85
Excoriations, plaster for,	167
Extracts, narcotic, mode of preparing,	86
Extract of sabbatia angularis,	215
sarsaparilla, diluted with alcohol,	65
senega polygala,	108
Falsifications des drogues, simple et composees	155
Faure J. B. on a new process for procuring morphia,	71
Fecula from arrow root, by M. Guibourt,	47
wheat,	46
Fig, analysis of the milky juice of	339
Fumigation, odoriferous troches for,	341
Glass of Strontia and soluble glass of Dæberiner,	252
Green, Schweinfurt, preparation of,	308
Griscom, J. H. translation of Decandolle's paper on cinchona, &c.	234, 290
Gum arabic, sophisticated,	247
senegal,	247
tragacanth,	247
Guaiaecum wood,	247
Guibourt, M. on fecula,	46
Hancock John, M.D. on sarsaparilla and its preparations,	57
on the Angustura bark tree,	50
on the kusia or koosia of the Indians,	144
Hemlock resin, by C. Ellis,	18

Hive syrup of Coxe,	110
Hodgson William, Jun. on the compound syrup and fluid ext. of sarsaparilla,	282
Hydrochloric acid,	156
Hydrocyanic acid,	156
Hydrometer of Baume,	286
common, remarks on, with a description of a new method of graduating it, by D. B. Smith,	9
Indigenous species of the genus cantharis,	271
Infusion of sabbatia angularis,	215
Insects, vesicating,	165
Iodates and chlorates of the vegetable alkaloids, translated by F. R. Smith,	301
Iodates of brucia,	302
cinchonia,	301
quinia,	301
strychnia,	301
veratria,	302
Iodine, chlorine, and bromine, antidotes to the vegetable alkaloids,	73
Ioduretted hydriodic acid, test for rhubarb,	338
Ipomea jalapa, by D. B. Smith,	92
Iron in powdered cinchona,	216
some preparations of, by A. Ure, M.D.	61
Jalapa ipomea,	22
Jalap resin, soap of,	342
analysis of,	73
Jujube paste,	251
Kermes mineral,	164
Kinic acid,	229
and combinations with salifiable bases,	227
Kinates,	230
Kinate of cinchonia,	232
quinia,	231
Kusia or koosia of the Indians—bitter cucumber—momordica operculata of Lin. by Dr Hancock,	144
Lapis lazuli, blue colouring matter of,	136
Lead, carbonate of—purity of,	243
Light, effect of on plants,	255
Liquorice paste,	251
Lowig, Charles, on bromine and its principal combinations,	89, 169
Lozenges, cough,	250
of magnesia,	251
oxalic acid,	251
Magnesia lozenges,	251
metal of,	163
and turpentine,	168
Magnesium, preparation of,	164
properties of	164
Maize, ergot of,	85
Metal, radical of magnesia,	163
Milk of the palo-de-vaca,	343
Mineral kermes	164
Minutes of the College,	159, 311
Miscellany,	81, 160, 248, 337
Mixtures resino saponaceous,	342
Morphia, process for, by J. B. Faure,	71
extracted by fermentation,	219
Moussache and tapioca,	47
Moxas and preparation of, by E. Durand,	206

Mustard seed, analysis of,	340
Myrrh, test of,	84
Narcotic extracts, mode of preparing,	86
plants, mode of drying,	253
Nitric acid, test of,	157
Non-existence of chinoidine,	161
Nutgalls, antidote to strychnia,	83
Opium, fermentation of, applied to extraction of morphia, by A. Blondeau,	219
Orayuri, or Angustura bark tree,	50
Organic base, salifiable, new,	69
Original communications,	9, 89, 169, 257
Oxalic acid lozenges,	251
Palo-de-vaca, milk of,	343
Paste of jujube,	251
liquorice,	251
Peruvian bark, estimation of the vegeto-alkali of,	254
Pharmacie, la Societe de,	253
Pharmacy, state of in the department of the Seine,	296
Phosphate of quinia,	254
Phosphorus, powdering,	340
Pinic acid, a component of Venice turpentine,	81
Piperine, notice of, by T. G. Clemson,	249
Plants, effects of light on,	255
Plaster cloth, formula for, by M. Beral,	166
blistering with cantharides,	166
without,	167
issue,	166
for excoriations,	167
cloth, silk,	250
Polygala senega, by D. B. Smith,	105
Pomegranate, bark of the roots,	246
Potash, chlorate of adulterated,	244
chromate of, combinations,	245
Powder, Dover's,	250
Quinia, kinate of,	231
and coral dentifrice,	342
phosphate of,	254
sulphate, taste of,	254
Radical metal of magnesia,	163
Resino-saponaceous mixtures,	342
Resin of guaiac, soap of,	342
jalap, do.	342
oak or drusium,	344
Review of the Pharmacopœia of the United States, New York edition,	316
de Traite des Moyens de Reconnaître les Falsifications des Drogues, Simples et Composees, &c. By MM. Bussey and Boutron-Charlard,	154, 242
Rhubarb, aromatic syrup of,	218
test for,	338
Root of pomegranate, the bark of,	246
Sago,	48
Sabbatia Angularis, by D. B. Smith,	213
decoction of,	215
extract of,	215
infusion of,	215
tincture of,	215

Salacine active principle of willow bark,	248
composition of,	337
preparation of,	337
Salifiable organic base, new,	69
Sarsaparilla,	248
and its preparations, by Dr Hancock,	37
compound syrup and fluid extract of, by W. Hodgson, jun.	282
formulæ for different preparations of, by M. Beral,	64
aqueous solution of extract of,	65
extract diluted with alcohol,	65
syrup of extract of,	66
vinous solution of extract of,	66
Scheele's green,	252
Schweinfurt green, preparation of, by Creuzberg,	308
Selected articles,	39, 136, 219, 290
Seneka oil, by S. Allinson, jun.	35
Senega polygala,	105
preparation of,	108, 109
Senegal gum sophisticated,	247
Silk plaster cloth,	250
Silvic acid from pinus sylvestris,	82
Smith, Daniel B., on Baume's hydrometer,	286
common hydrometer,	9
ipomea jalapa,	22
polygala senega,	105
sabbatia angularis,	213
F. R., translation of a memoir on the iodates and chlorates of vegetable alkaloids,	301
Dr's, sudorific mixture,	68
wine,	68
Soap of resin of guaiacum,	342
jalap,	342
Source of spirits, new,	253
Statistical table of the pharmaciens of the department of the Seine,	297
Soluble glass of Dœbereiner,	252
Strontia,	252
Strychnia, nut-galls antidote of,	83
Styrax or storax of Bogota,	163
Sulphate of quinia, taste of,	254
Sulphuric acid,	157
and alcohol, mutual action of,	73
ether, preparation of,	246
Syrup of Cuisinier,	67
gum tragacanth,	168
senega,	109
Table, statistical, of the pharmaciens of the Seine,	297
Tartrates of iron,	61
Taste of sulphate of quinia,	254
Tinct. sabbatia angularis,	215
of senega,	108
Tragacanth gum powder sophisticated,	247
syrup of,	168
Traite des moyens de reconnaitre les falsifications des drogues, simple et composees, &c. review of,	154, 242
Troches, odoriferous for fumigation,	341
Troth, Henry, address,	258
Turpentine and magnesia,	168
Ultramarine, artificial,	136
Ure, Andrew, M.D. on some preparations of iron,	61
Uva ursi, analysis of,	339

Vegetable alkali, estimation of in Peruvian bark,	254
Venice turpentine contains pinic acid,	81
Vinous solution of extract of sarsaparilla,	66
extract of sarsaparilla,	67
Vesicating insects,	165
Wax, sophistication of,	245
Weights and measures, by B. Ellis, M.D.	111, 188
Willow bark, active principle of,	85, 249
Winter bark and canella alba,	246
Wood of guaiacum, sophistication of,	247

END OF VOL. II.

1873

W. C. C. C.

AMERICAN PERIODICAL SERIES

TITLE AMERICAN JOURNAL OF PHARMACY
(4 PRELIMINARY NOS. 1825-1827; VOL. 1, APRIL 1829+)

(NEW SERIES 1-6 AS PHILADELPHIA COLLEGE OF PHARMACY JOURNAL)

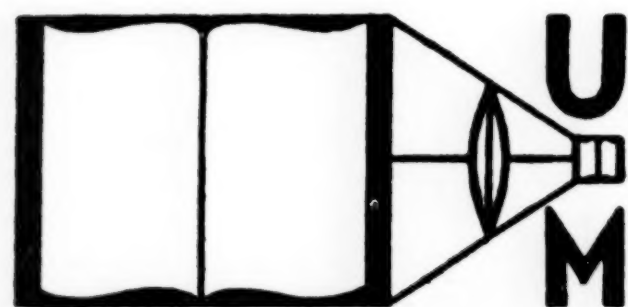
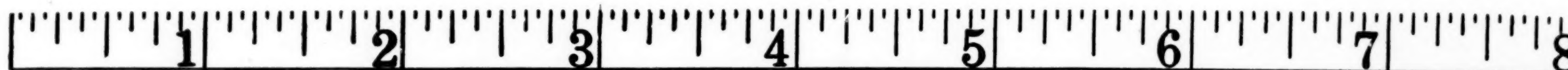
VOLUME 1-3 NUMBER(S) _____ DATE APRIL 1829-JAN. 1832
NEW SERIES

PLACE OF PUBLICATION PHILADELPHIA

PHOTOGRAPHED FROM
ORIGINAL IN NEW YORK ACADEMY OF MEDICINE

CONDITION OF ORIGINAL FAIR

ORDER NUMBER APS 730



UNIVERSITY MICROFILMS

ANN ARBOR

MICHIGAN